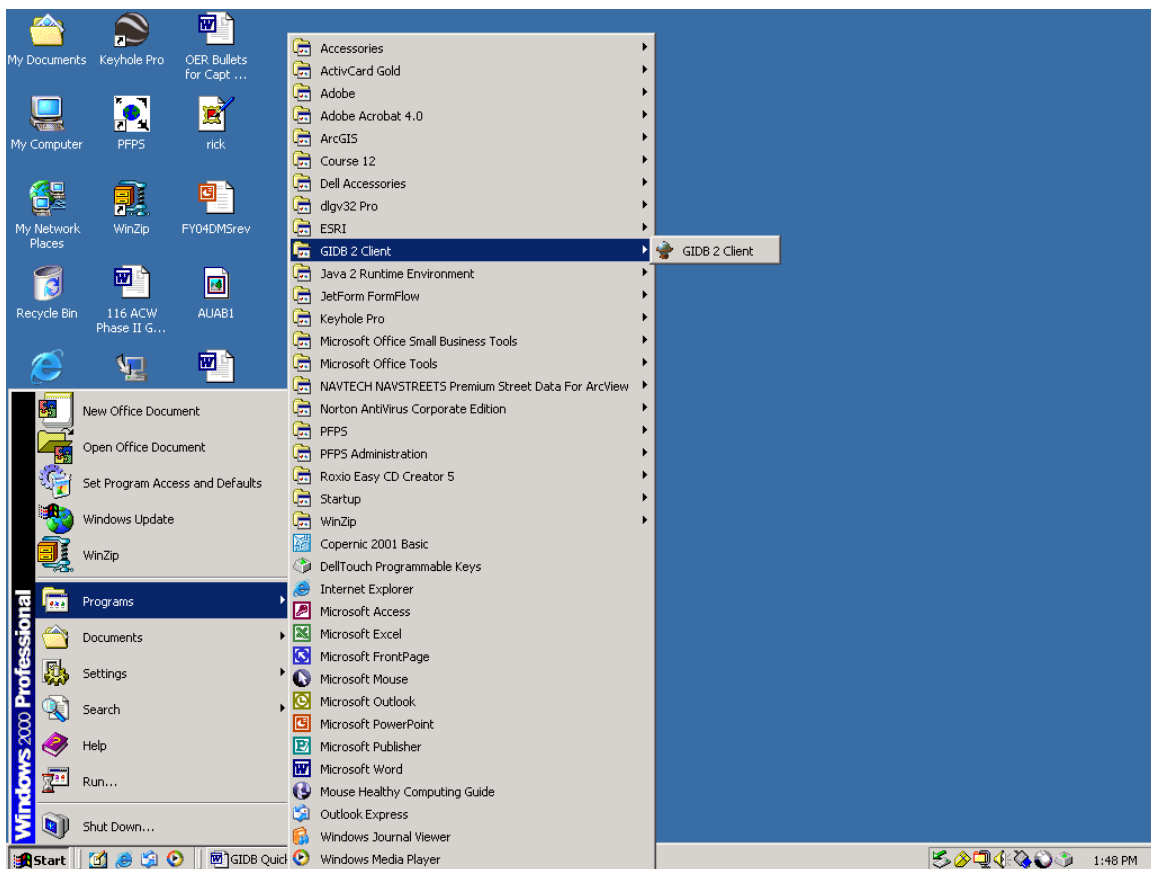


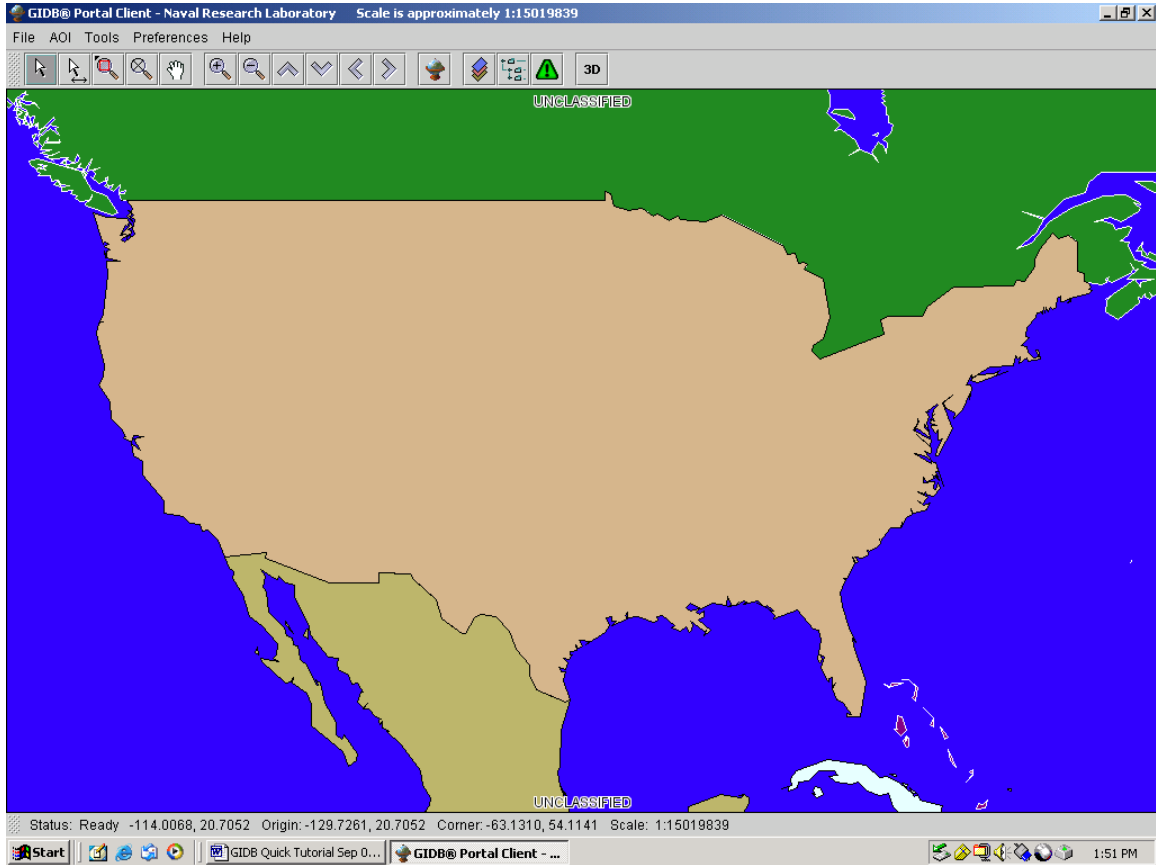
NRL's GIDB™ “THICK CLIENT”

The Geospatial Information Database (GIDB™) Thick Client offers a variety of tools and functions for viewing and analyzing mapping data. It allows users to select free mapping data from a variety of mapping servers. It provides users mapping services and data without any licensing or data warehousing cost.

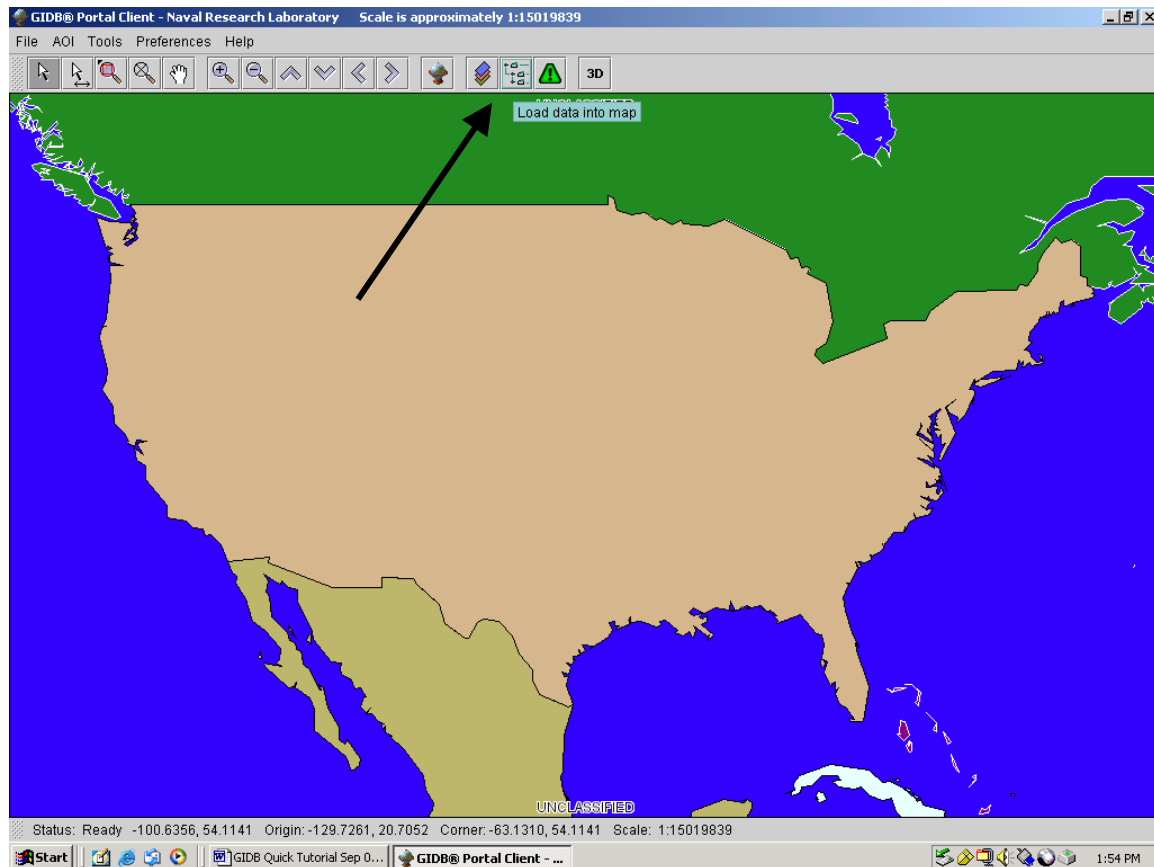
- 1) To begin using the GIDB™ Thick Client download the free software from the <http://ngbcdmaps.org> page. Scroll down the page to and click on the **Go to the NRL GIDB™ Download Page** link under the Downloadable Tools Area. Follow the steps for downloading.
- 2) To load the software after downloading **double click** on the **GIDB2Setup** file. Once the software is loaded and your computer is restarted you are ready to use the GIDB™ Thick Client.
- 3) Use your mouse to select in **Windows: Start, Programs, GIDB 2 Client** and click on the GIDB 2 Client icon to start the GIDB™ program.



4) Your screen should appear as shown below:

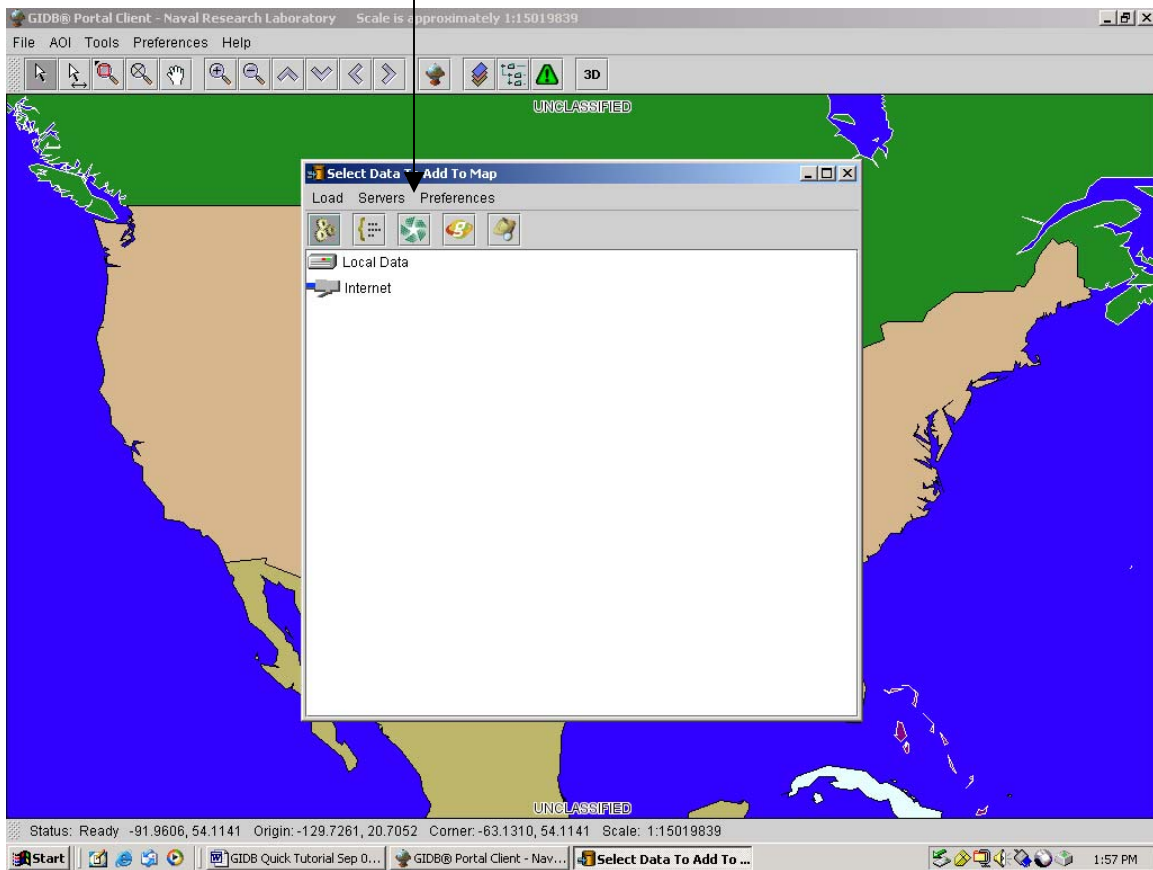


5) To begin loading map data from various servers: Click on the Data Tree Icon as shown below:



6) You are now ready to select data to add to the map. Please note the 5 Icons that are across the top part of the **Select Data To Add To Map** box. You also have the ability to click on **Local Data** to add any of your own mapping files stored locally. Specifics on local data will be covered in a separate section. The 5 Icons are very useful to categorize the various servers that you can access for your mapping needs. You also have the ability to click on **Internet** for the entire listing of available servers, but it is easier to use the Icons provided. The first of the five icons from left to right is the default box or "Full View" you get when you first click on the Data Tree. The second icon is data servers categorized by "Thematic View", the third icon is data servers associated with the "USGS National Map", the fourth icon is the "Geography Network" from ESRI, and the fifth icon is a powerful yet simple search engine for the Digital Mapping Server Website which quickly accesses mapping data server based on keyword(s) search function. These 5 Icons are recent additions as of the end of FY04 to the GIDB™ Thick Client. The use of these 5 Icons will save time in the creation of maps and analysis of mapping data and make the GIDB™ Thick Client more user friendly.

5 ICONS

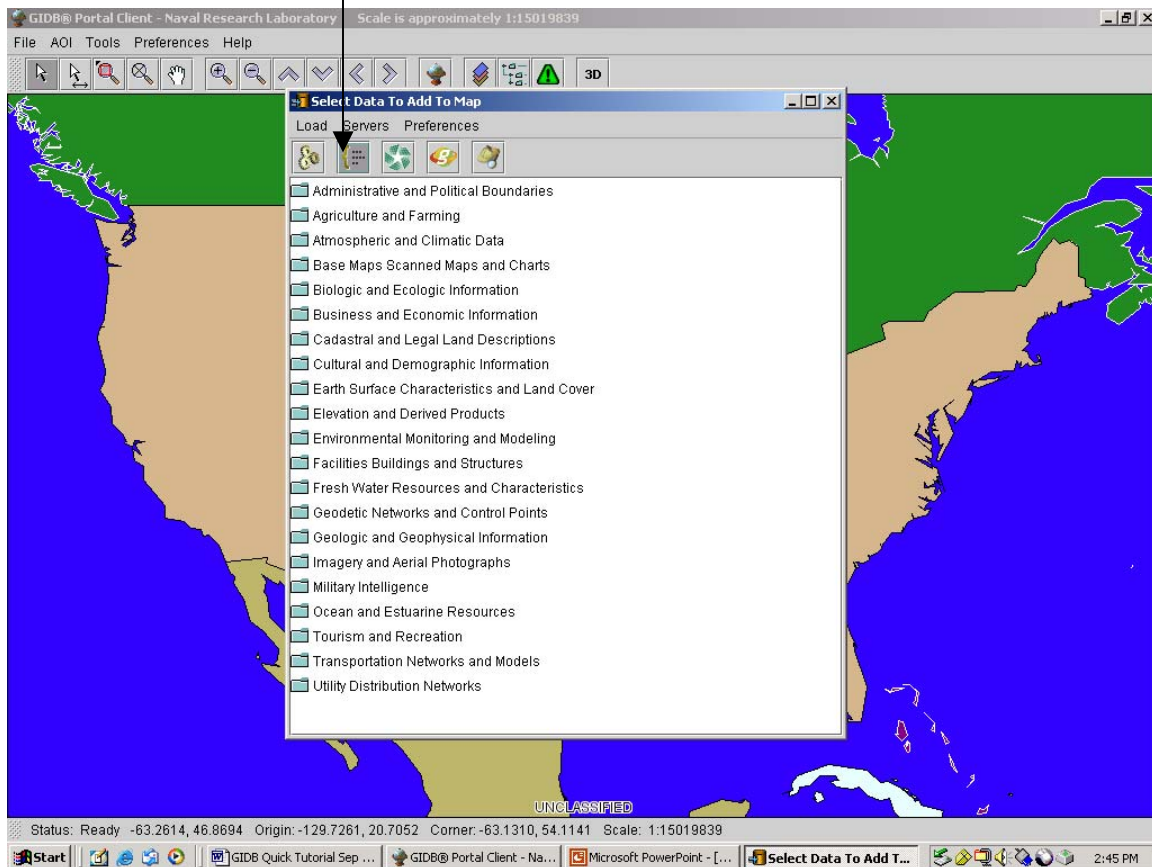


7) Since Icon #1 is the default or “Full View” (as shown above) we will discuss the use of Icon #2 (Thematic View). Icon #2 breaks down the different types of data available by categories or themes. Currently there are at least 21 different categories or themes:

Administrative and Political Boundaries, Agriculture and Farming, Atmospheric and Climatic Data, Base Maps Scanned Maps and Charts, Biologic and Ecologic Information, Business and Economic Information, Cadastral and Legal Land Descriptions, Cultural and Demographic Information, Earth Surface Characteristics and Land Cover, Elevation and Derived Products, Environmental Monitoring and Modeling, Facilities Buildings and Structures, Fresh Water Resources and Characteristics, Geodetic Networks and Control Points, Geologic and Geophysical Information, Imagery and Aerial Photographs, Military Intelligence, Ocean and Estuarine Resources, Tourism and Recreation, Transportation Networks and Models, and Utility Distribution Networks.

8) Data available under these categories or themes is dependent on scale, area of interest, and server availability. Each of these servers are independently owned and maintained. NGB-CD DMS Portal allows the access for the GIDB™ Thick Client to use the data but does not control the actual servers or the availability of the data.

ICON 2 – Thematic View (Themes and Layers)



9) The Thematic View shown above is one of five ways to bring in mapping data from the various servers. Icon #3 (National Map View) uses the servers from the USGS National Map. It uses at least 11 different categories or themes:

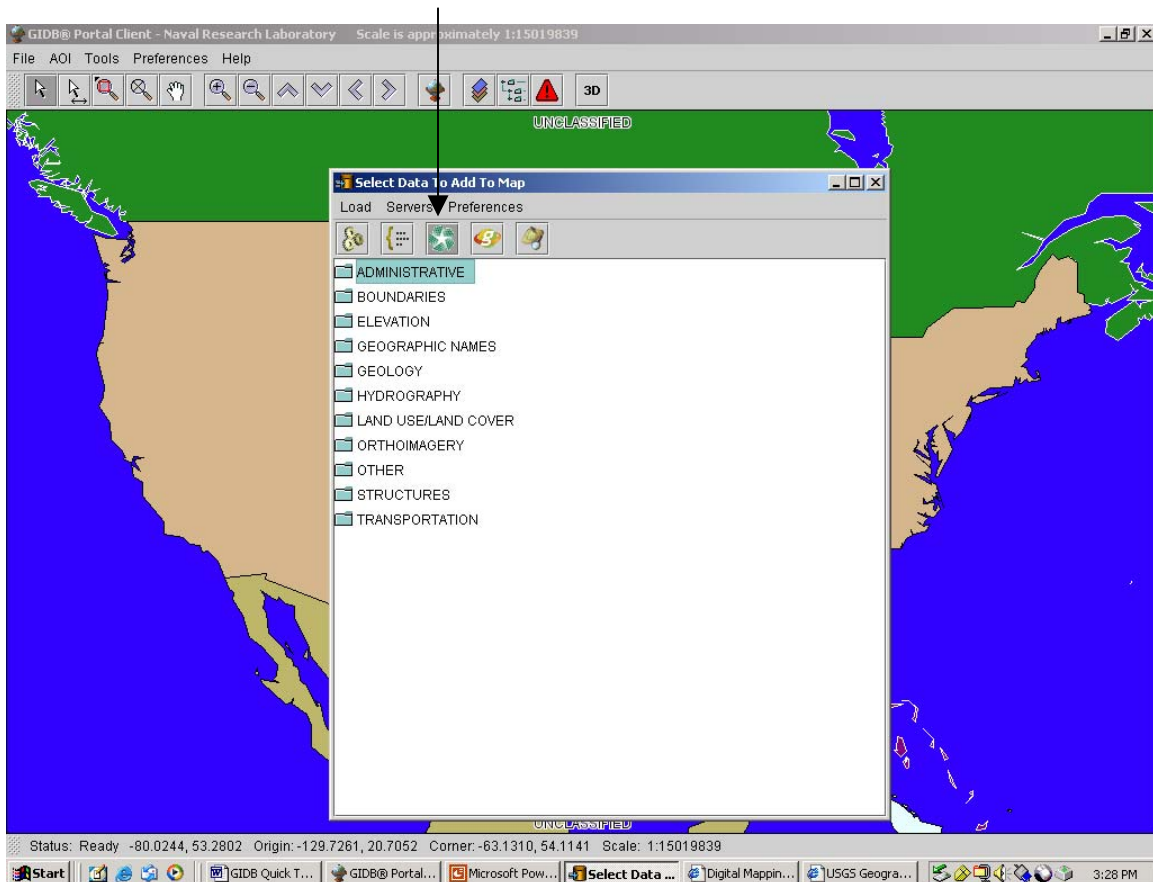
Administrative, Boundaries, Elevation, Geographic Names, Geology, Hydrography, Land Use/Land Cover, Orthoimagery, Other, Structures, and Transportation.

According to the US Geological Survey (USGS):

"The National Map is a consistent framework for geographic knowledge needed by the Nation. It provides public access to high quality, geospatial data and information from multiple partners to help support decision-making by resource managers and the public. The National Map is the product of a consortium of Federal, State, and local partners who provide geospatial data to enhance America's ability to access, integrate, and apply geospatial data at global, national, and local scales. The U.S. Geological Survey (USGS) is committed to meeting the Nation's needs for current base geographic data and maps. Our vision is that, by working with partners, we will ensure that the Nation has access to

current, accurate, and nationally consistent digital data and topographic maps derived from those data.”

ICON 3- The National Map

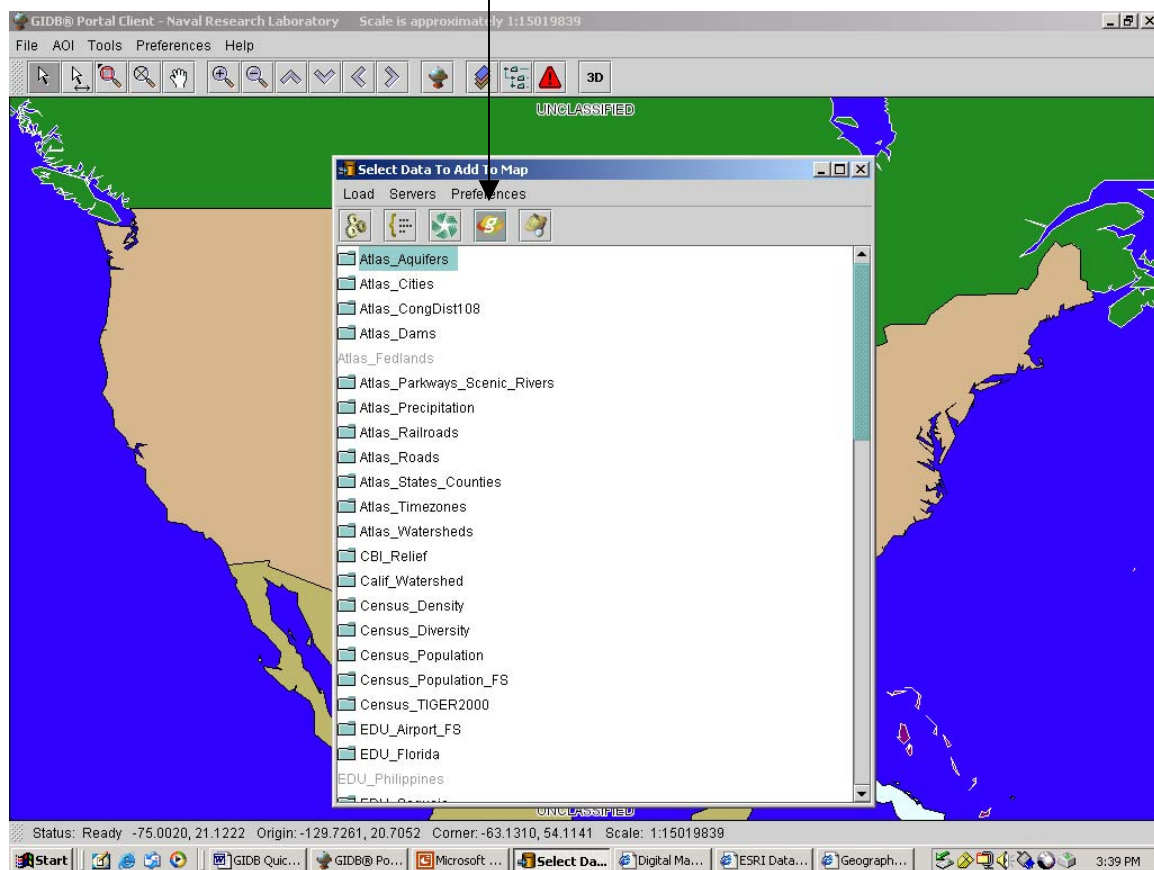


10) Icon #4 (Geography Network View) uses the Geography Network from ESRI.

The Geography Network is a global network of geographic information users and providers. It provides the infrastructure needed to support the sharing of geographic information among data providers, service providers, and users around the world. Through the Geography Network, you can access many types of geographic content including dynamic maps, downloadable data, and more advanced Web services.

11) There are at least 66 categories or themes of data available through ESRI's Geography Network.

ICON 4 – The Geography Network



12) Icon #5 is the Updated Search tool. It allows the user to type in a keyword or keywords to do a search on available mapping data based on the keyword(s).

13) The search will bring back data sources depending on the area of interest, scale, and availability of the data.

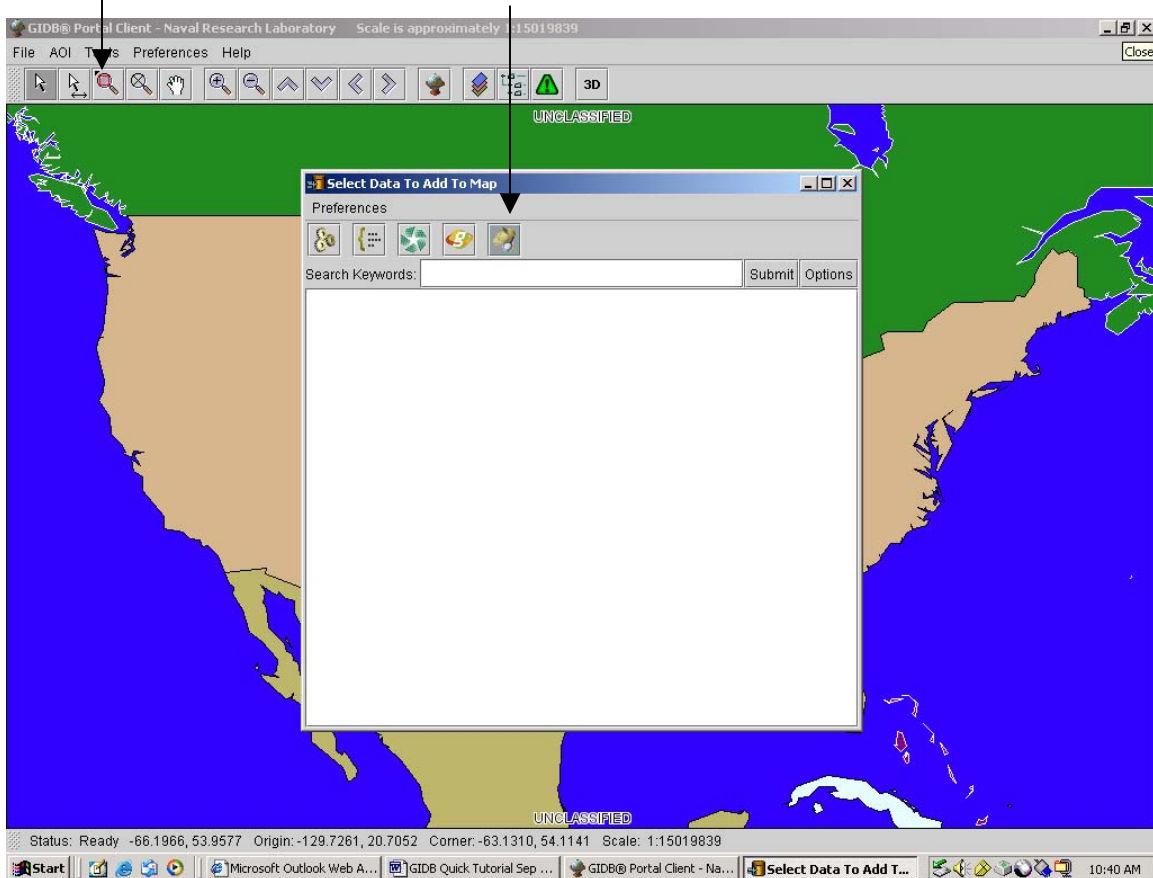
14) For example if you are wanting to bring up census data for the entire United States, simply type in the word "census". A broad listing of data available from the US Census Bureau will be displayed.

15) If you want a more detailed area of interest you can use the "zoom" tool and select a smaller area of interest (i.e. Florida) by using the tool to draw a box around the state.

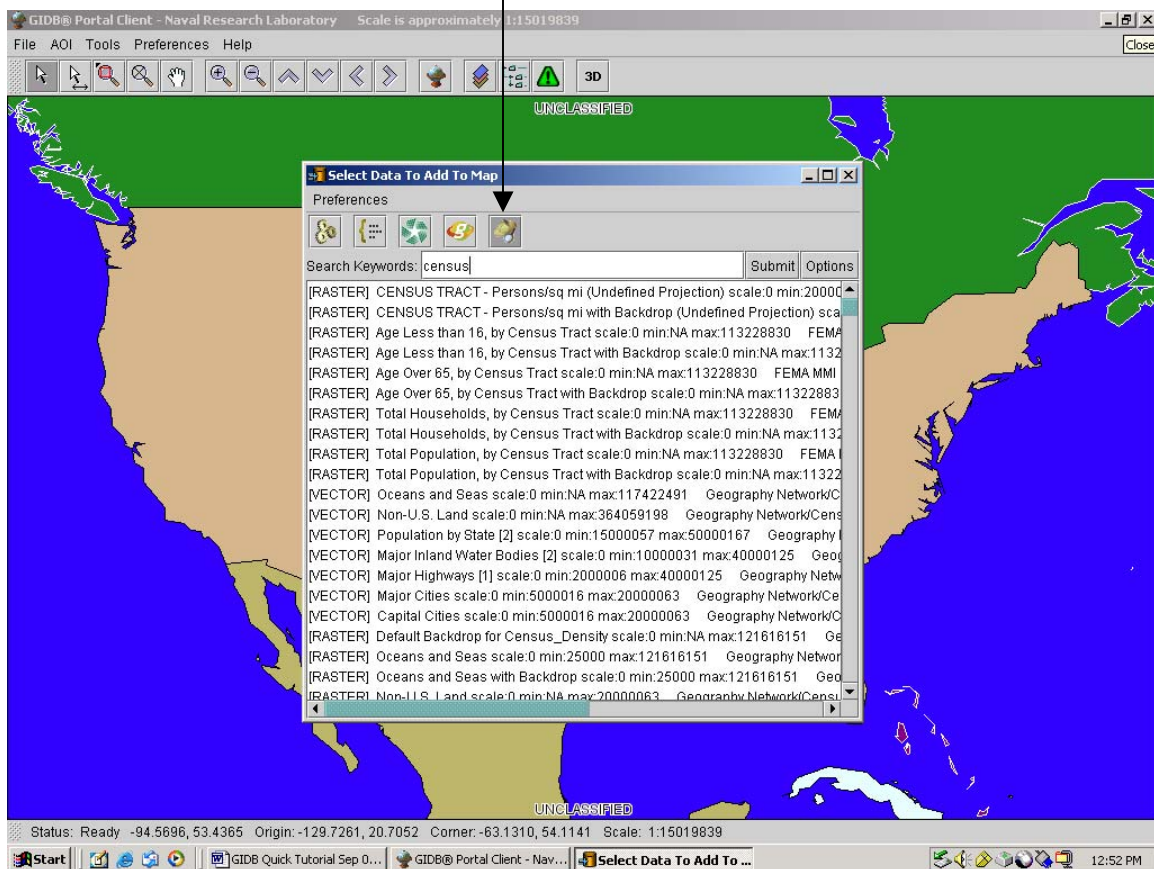
16) When your keyword search comes back with the matching data sets you can double click on them to bring them into the map display.

ZOOM

ICON 5 – Key Word Search

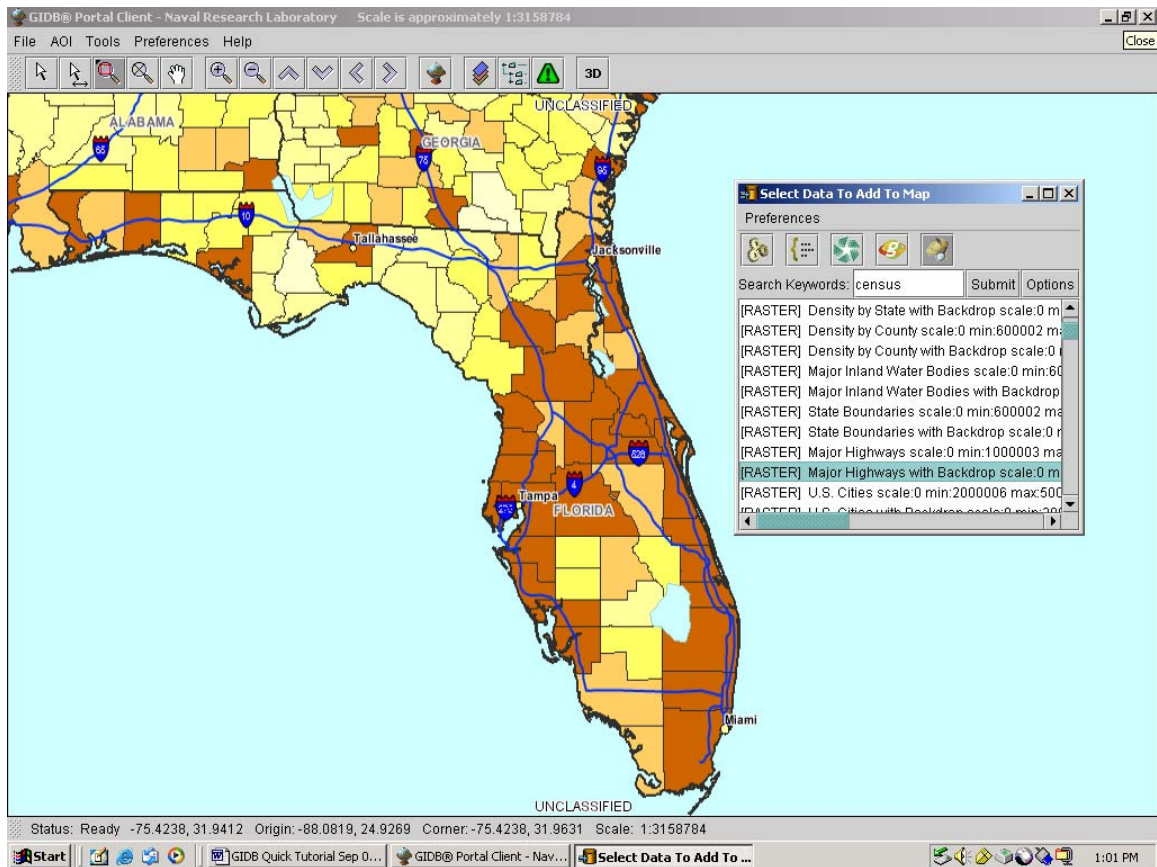


Keyword: Census



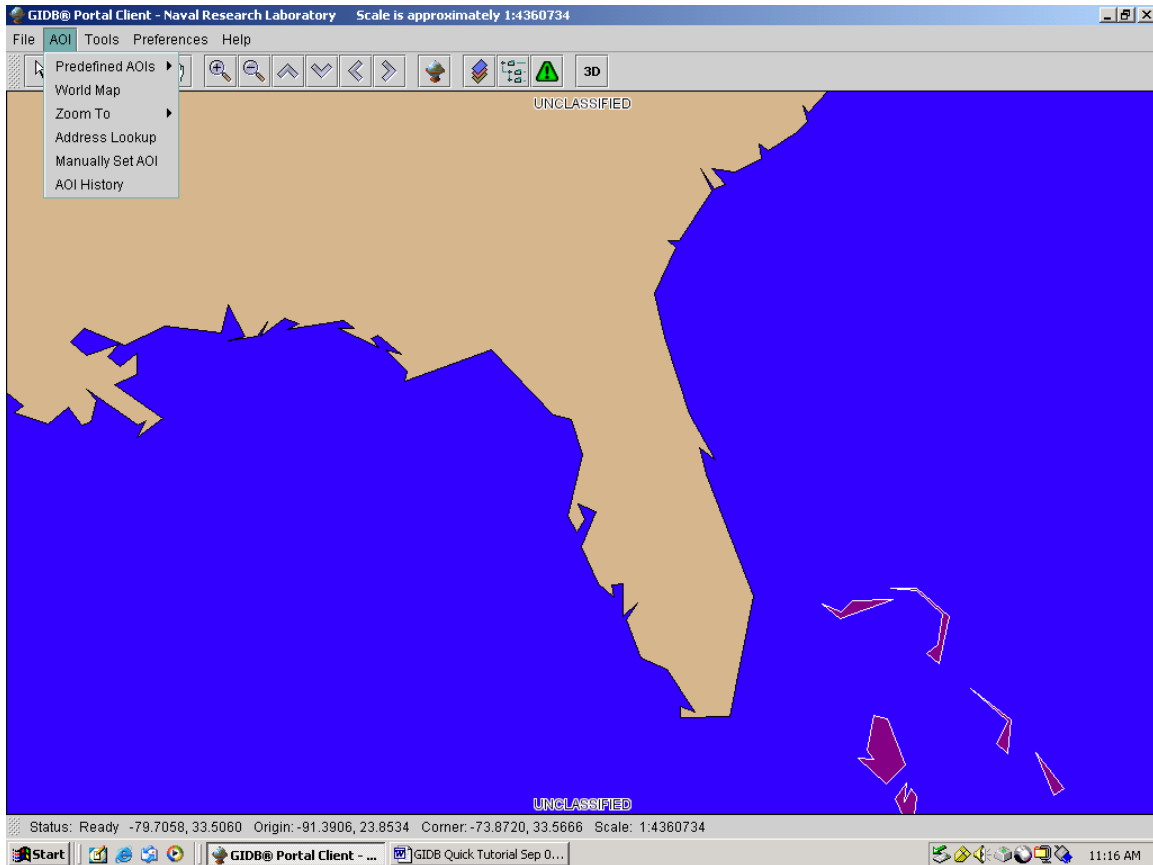
17) The map shown below is a result of double clicking on the search return of “Major Highways with Backdrop”.

18) Continue to type in different keywords and for your area of interest to see the different types of mapping data available.





19) Now that we have looked at the 5 main Icons under the Data Tree for loading map data, we will now look at some ways to manipulate the mapping data. At the top of the tool bar there are drop down menus for "File, AOI, Tools, Preferences, and Help". The AOI (Area of Interest) menu options determine the map area to be displayed. When you click on AOI, you can choose from "Predefined AOIs for Country, County, or State", "World Map" for zooming out to world view, "Zoom to

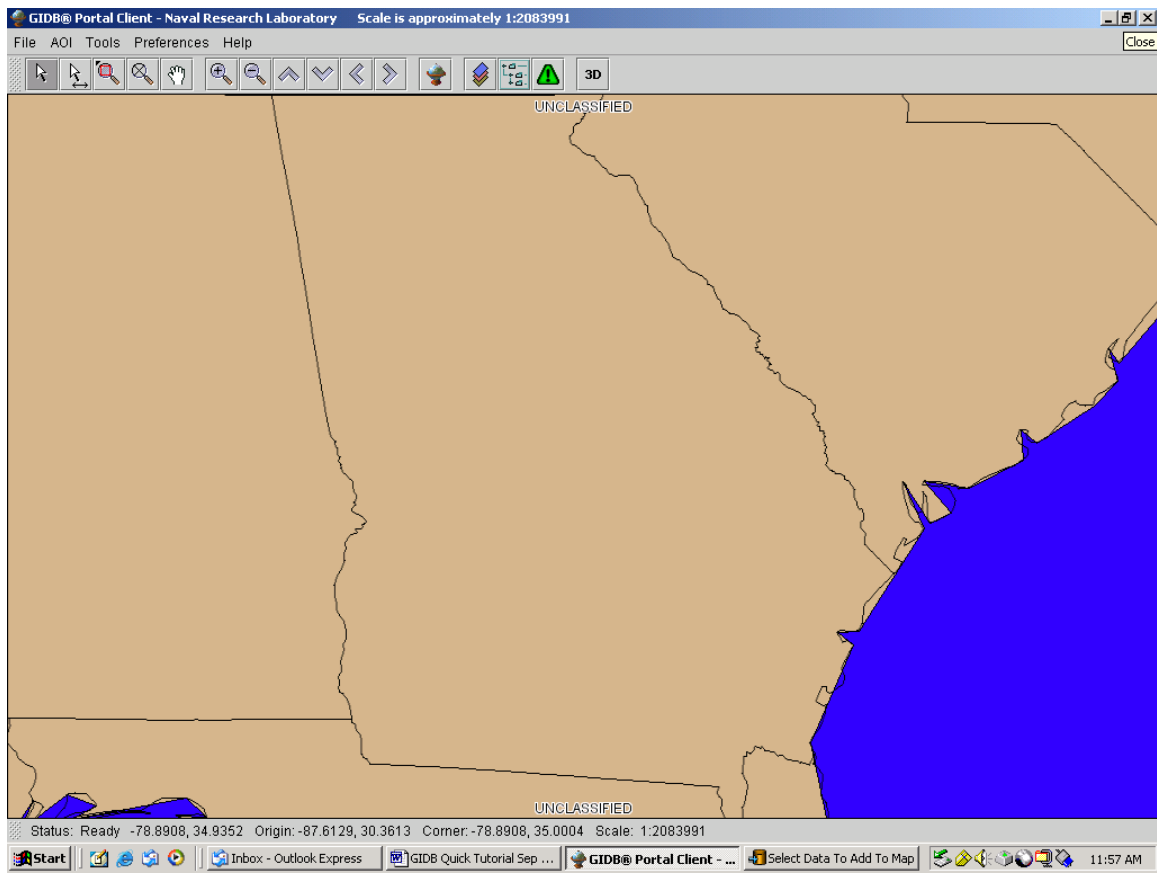
for scale (1:1,000 – 1:10,000,000) or range (0.5 – 10,000 miles)”, “Address Lookup – type in complete address”, “Manually Set AOI” to provide a bounding box or Center and Radius coordinates in either Decimal Degrees/Degrees, Minutes, Seconds/UTM/MGRS, or “AOI History” from previous AOI views.



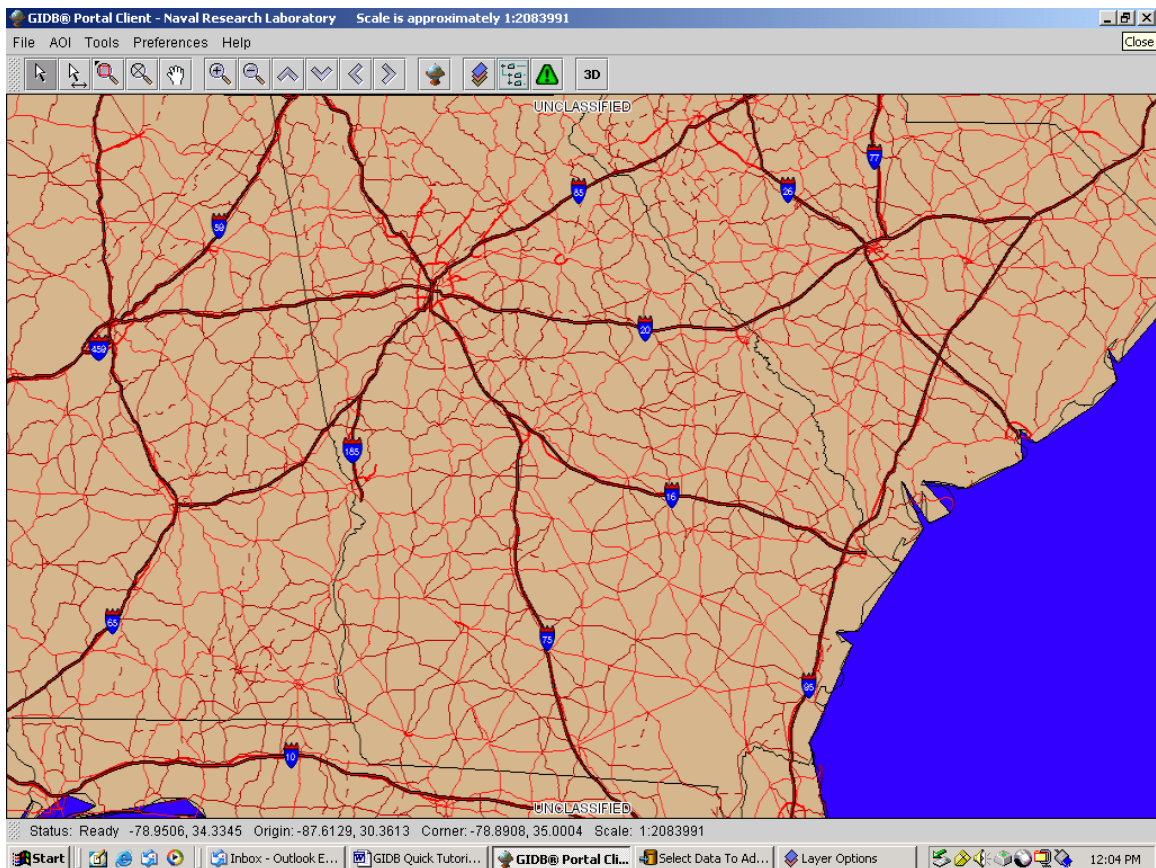
20) A simple way to set the AOI is to click on the “Predefined AOIs” and then click on “State”. Next for example purposes click on the “down arrow” and then click on “GA”. The geographic extent of Georgia (GA) is now displayed. Next


click on the “Data Tree Icon”  on the tool bar. Then click on the third Icon


 from the left, “The National Map View”. Double click on “Boundaries”. Next double click on “STATE/TERRITORY (Auto)”. The state boundaries are now displayed on your map.



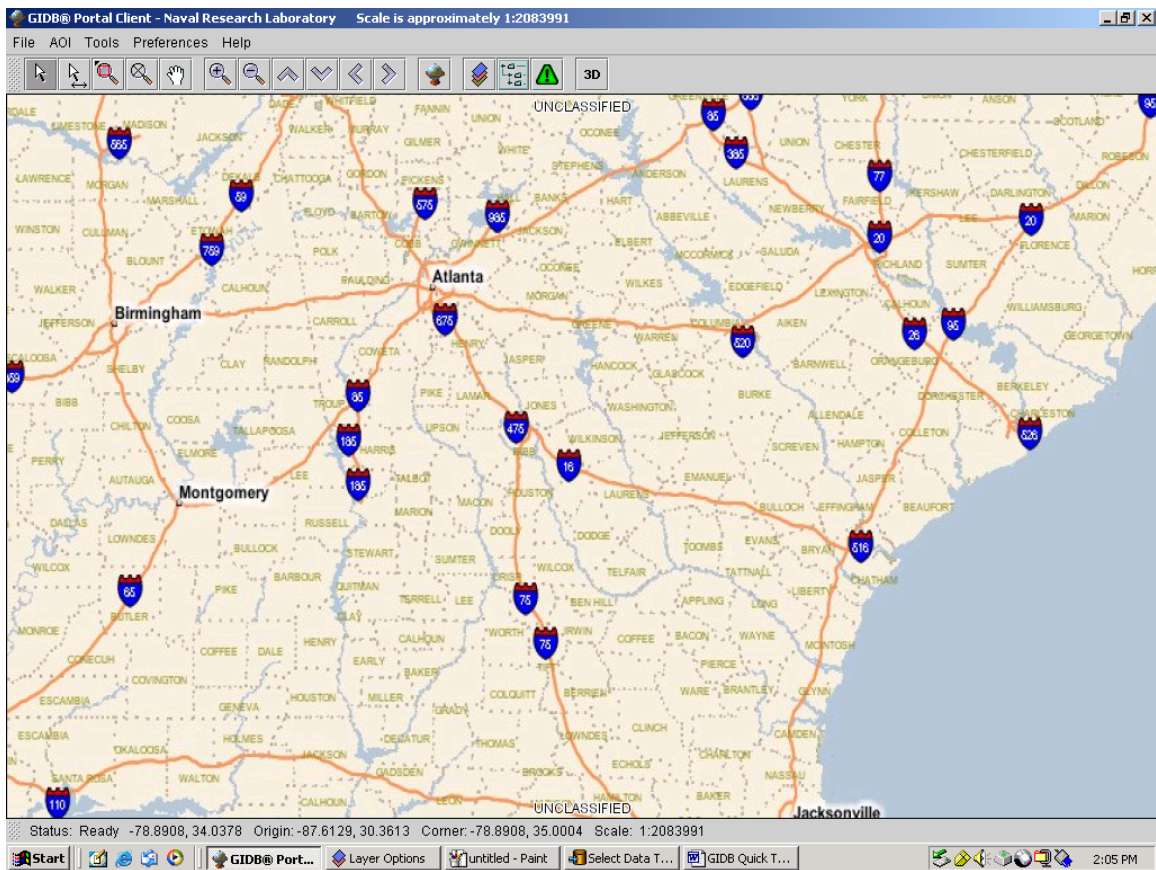
21) Next from the “National Map View” double click on “TRANSPORTATION” then double click on “ROADS (Auto). This brings up the Interstates and Major Roads for the Area of Interest selected.



22) One of the most used data servers is the Tele Atlas Data Server. Currently there are no cities displayed on the map. To do a search for data use the search engine the fifth icon from the left .

(Note: If you click on the Data Tree  and the “Select Data To Add To Map” box does not display check to see if it is minimized and then click on the “Select Data To Add To Map” at the bottom of the screen to restore and resume adding mapping data.)

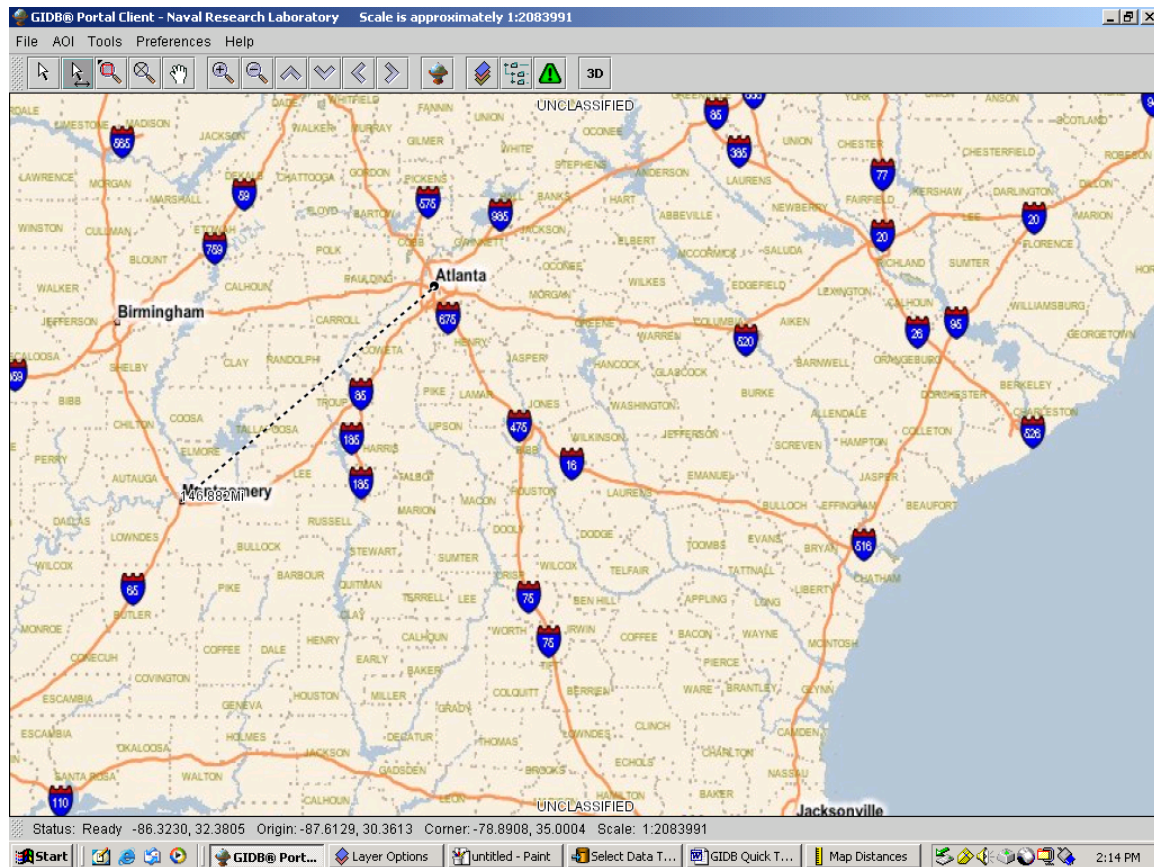
23) After clicking on the “Search View” icon, type in “Tele Atlas Cities” and scroll down to “Cities with Backdrop” and double click.





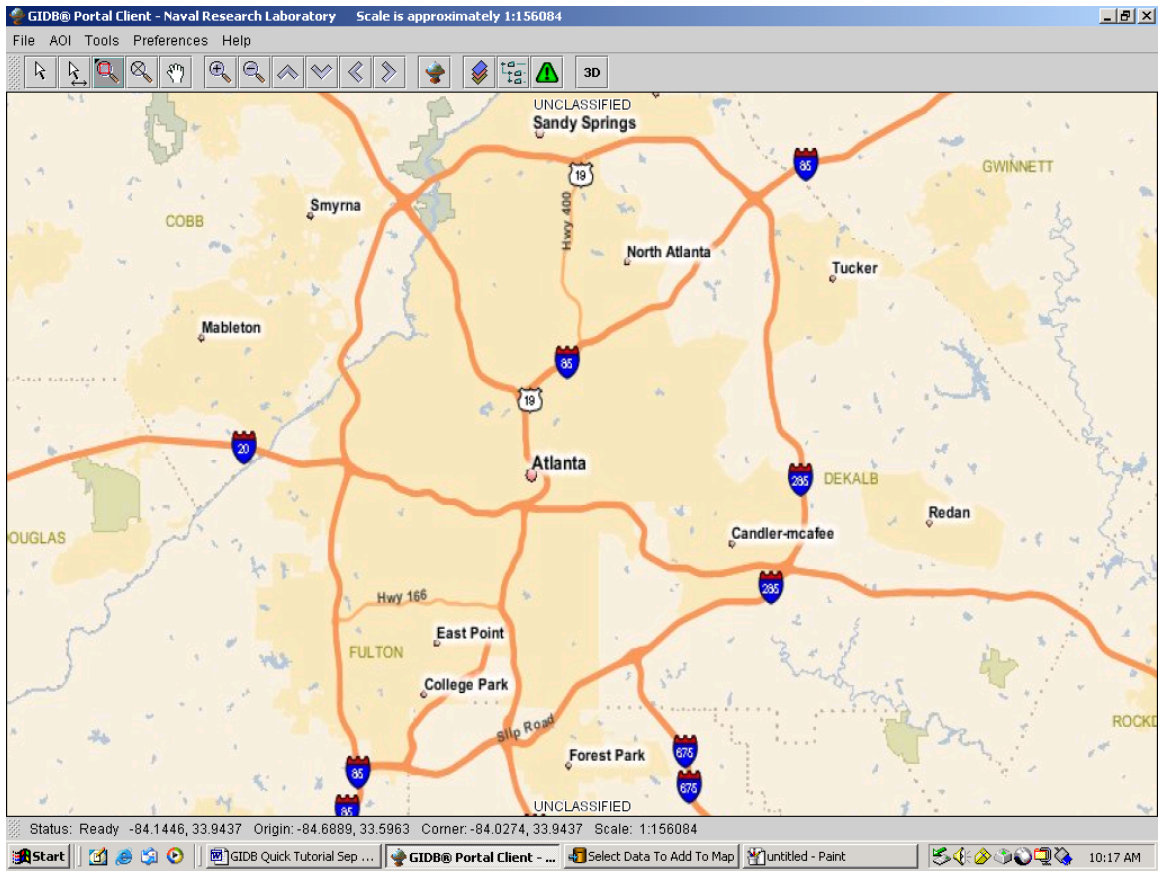
24) Now that you have the Tele Atlas data loaded you are ready to use the mapping tools to manipulate the map data. The tools are fairly self-explanatory as shown in the graphic below:

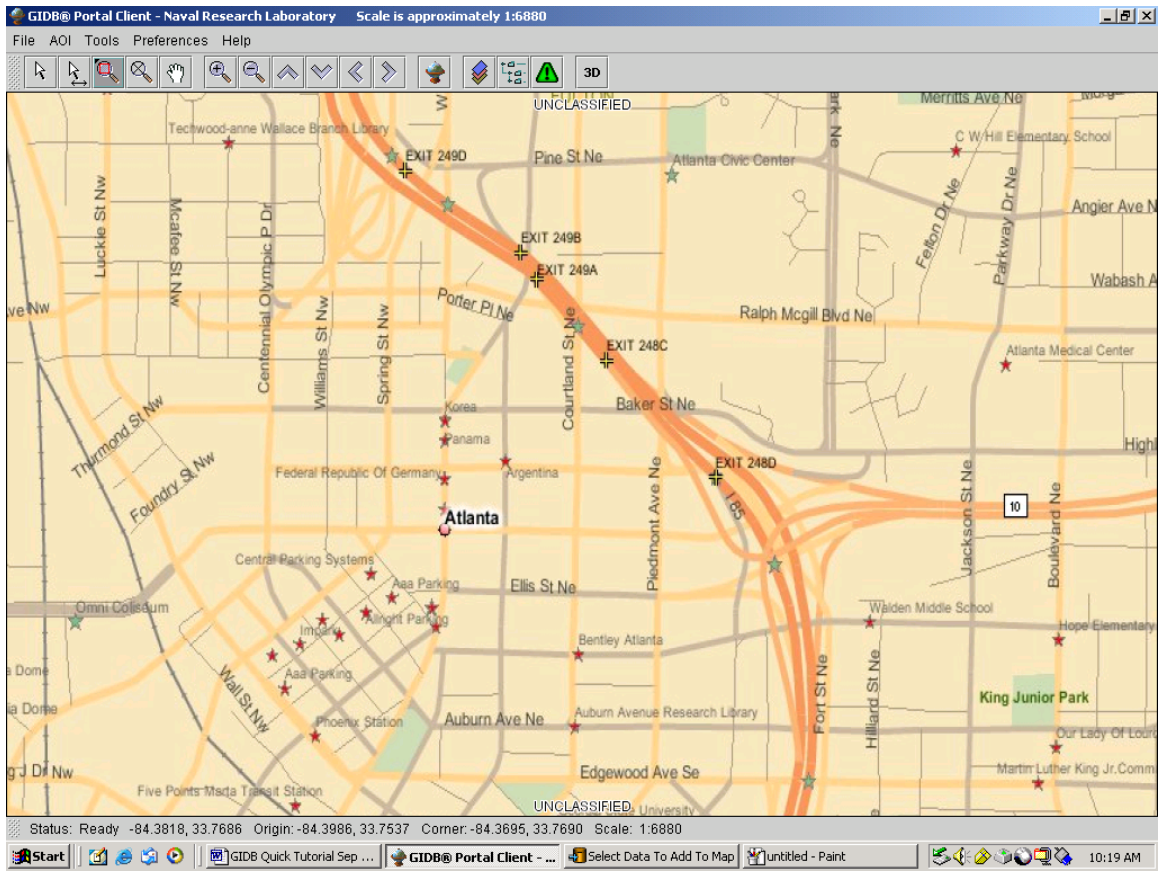
	Distance Tool	Finds the cumulative distance between waypoints.
	Zoom Area	Zooms to fit a box selected by the user.
	Center	Centers the map on a selected point.
	Pan	Allows the user to "grab" the map and re-center it.
	Zoom In	Zooms in on the selected point.
	Zoom Out	Zooms out on the selected point.
	Pan Up	Pans the map up.
	Pan Down	Pans the map down.
	Pan Left	Pans the map to the left.
	Pan Right	Pans the map to the right.

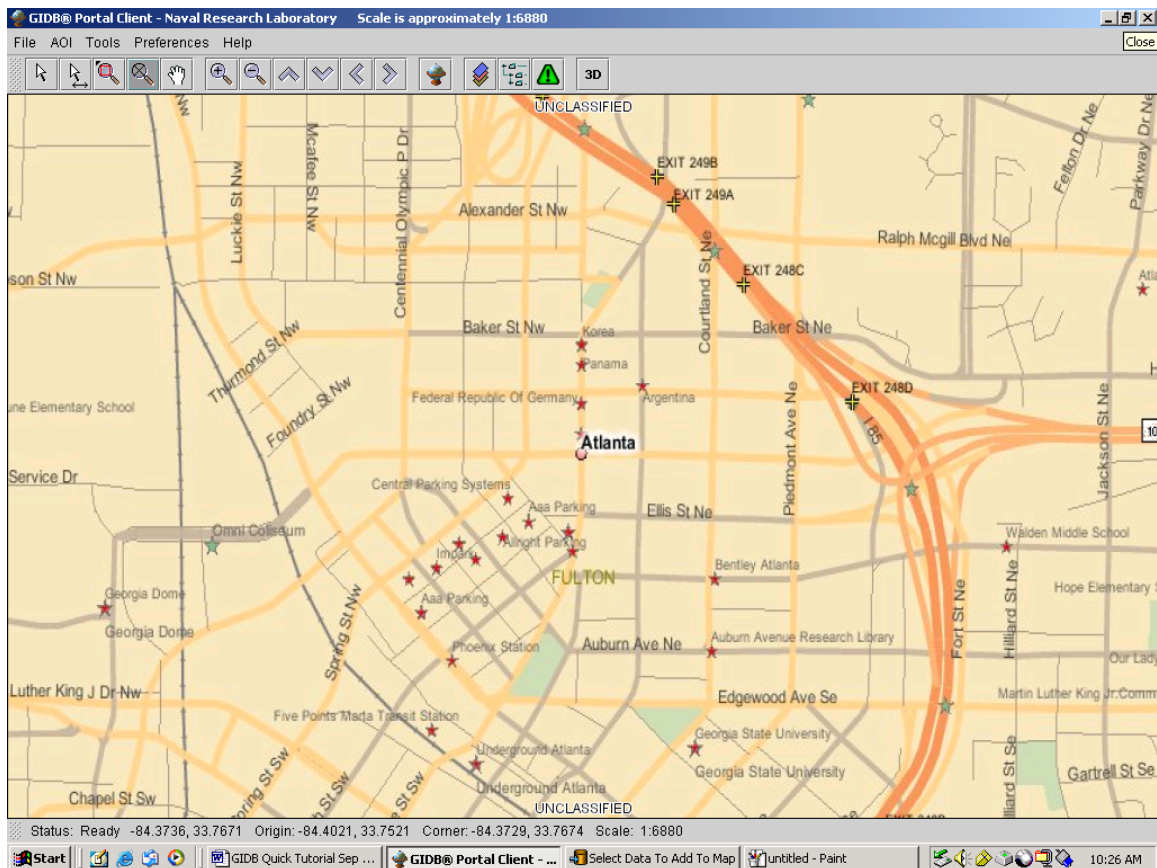
25) The “Distance Tool” measures distance from point to point. For example, measure the distance from Atlanta, GA to Montgomery, AL it is about 147 miles as measured point to point. This does not take the road or ground distance into account.




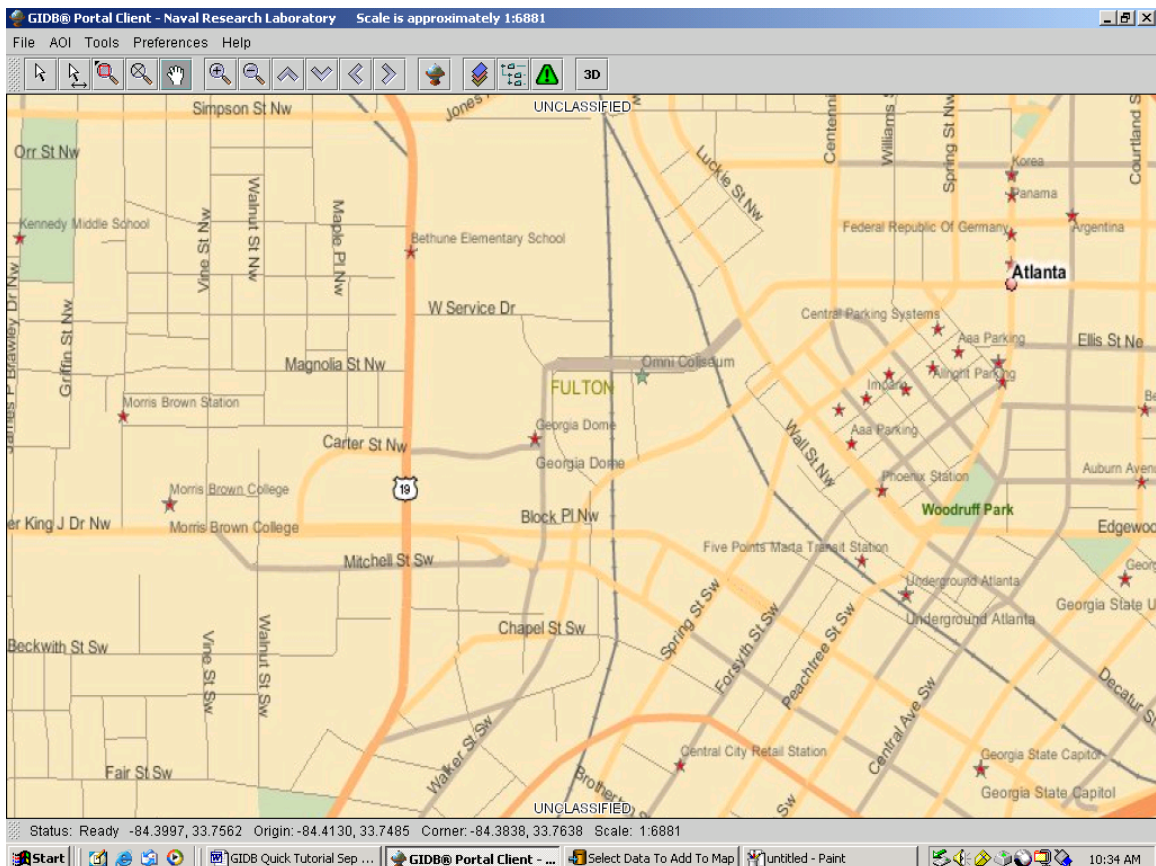
26) Use the “Zoom Area” tool  to zoom in on Atlanta. Repeat the process until you start to see street level detail on the map display. After you display the street level detail for Atlanta, use the “Center” tool  to center the display on the “dot” underneath the word “Atlanta” on the map.












27) Next use the “Hand” tool  to “grab” the “red star” for the “Georgia Dome” (Note: the Georgia Dome is located to the west of the dot for Atlanta in the lower left of your map display.) location by putting it over the “red star” and clicking and dragging it to the center of the map display and releasing the mouse.




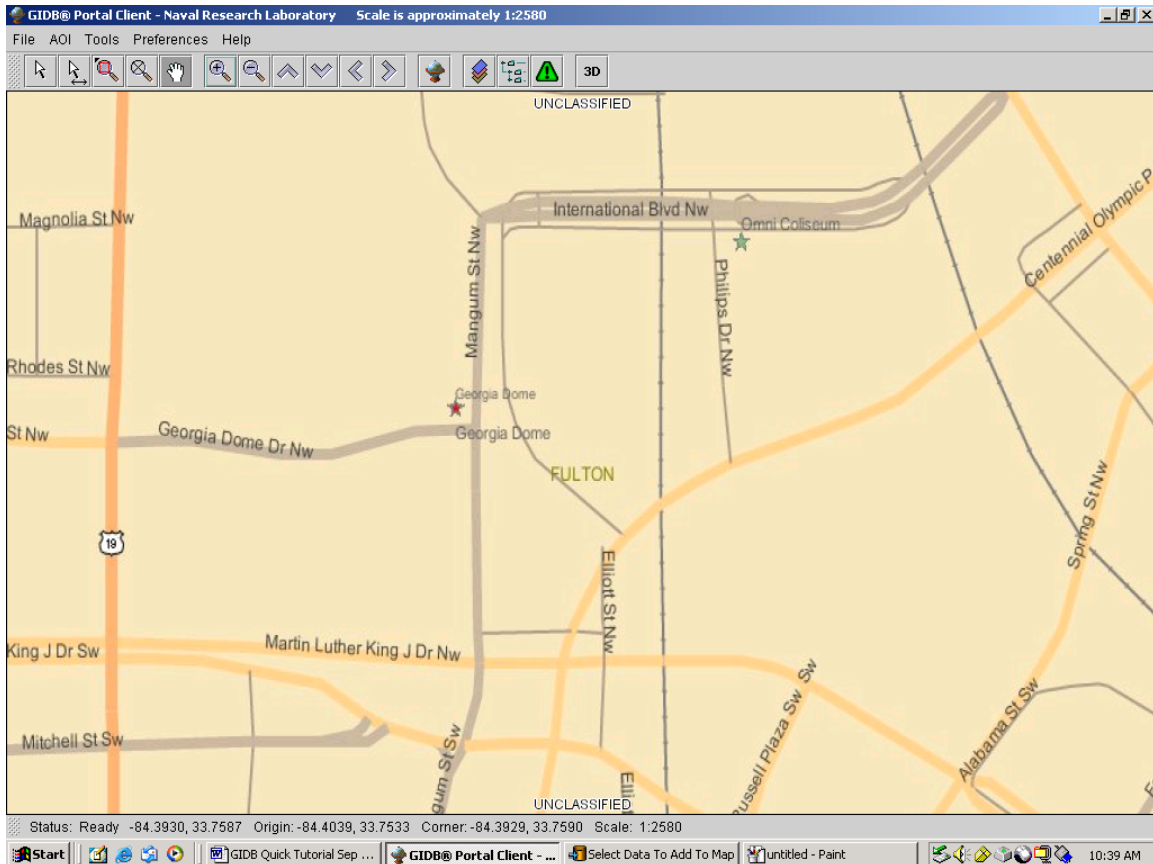
28) Next click on the “Zoom In” tool  to bring in more detail for the “Georgia Dome” (center of map display). We will now bring in another data layer to manipulate and demonstrate how to use the remaining tools.


29) Next click on the “Data Tree Icon”  on the tool bar. (Note: If you click on the Data Tree  and the “Select Data To Add To Map” box does not display check to see if it is minimized and then click on the “Select Data To Add To Map” at the bottom of the screen to restore and resume adding mapping data.)


30) Next click on the search engine icon . Type in “Color Aerial Imagery Atlanta”. It will take a little while to load but you will see unclassified high resolution aerial imagery appear in the map display for the same area covered by the street map (which is now underneath). The large white “round-like” building in the center is the “Georgia Dome”.

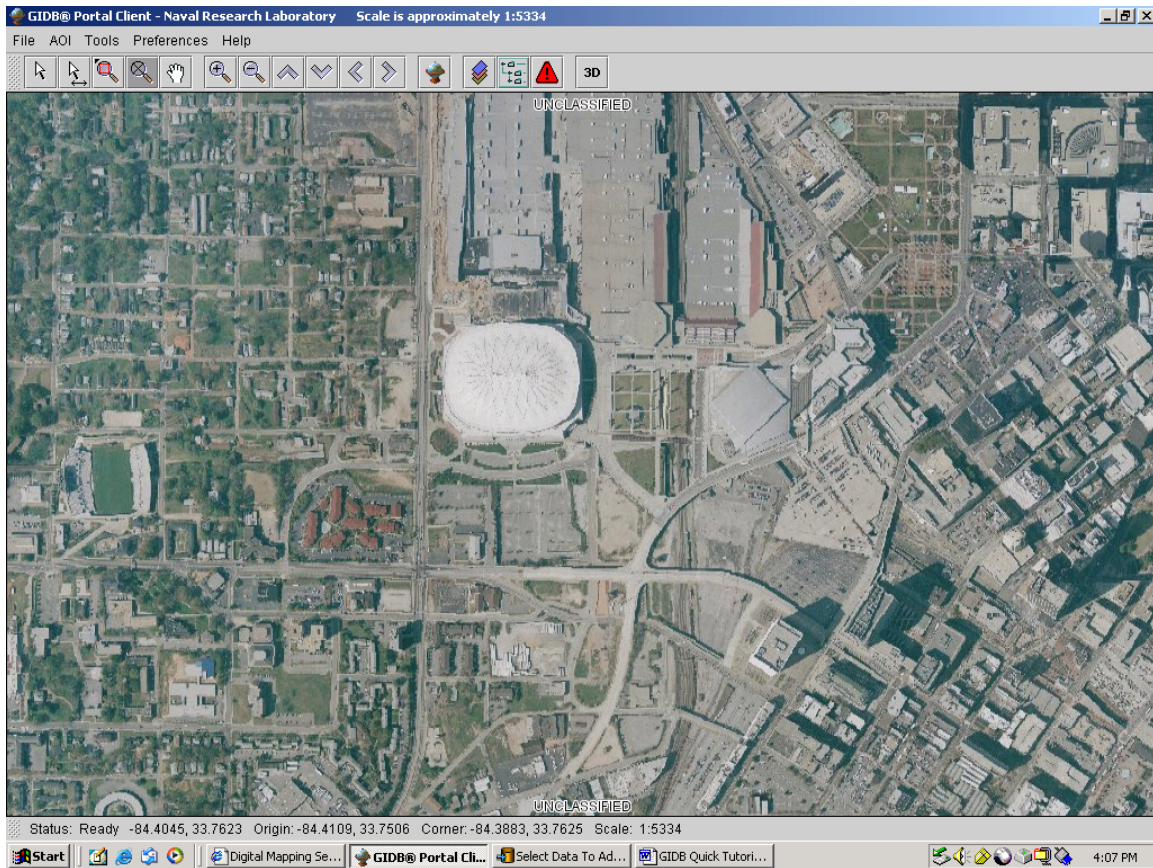
31) Use the “Zoom Out” tool  to see more area near the “Georgia Dome”.






32) You can use the  “Up” and “Down” Arrows to pan North or South.




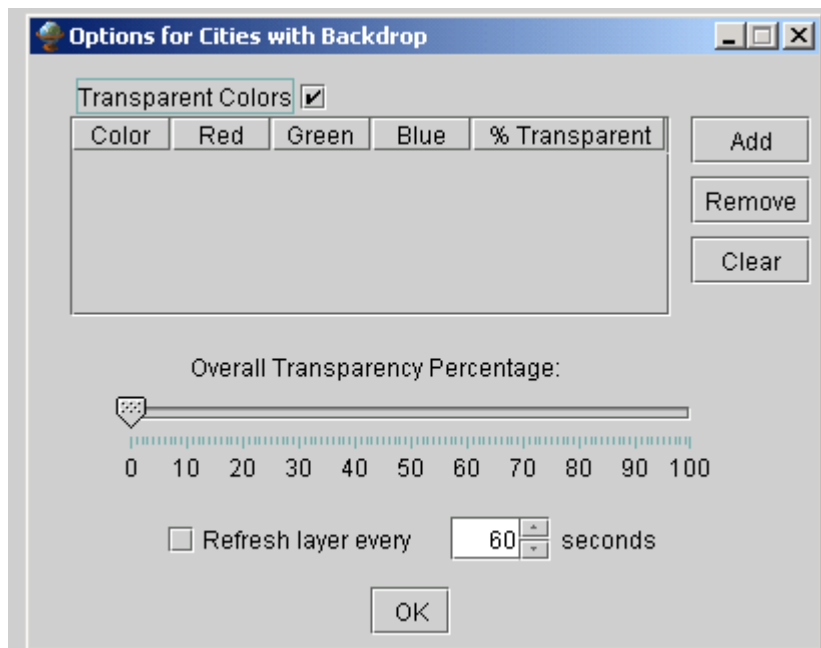
33) You can use the  “Left” or “Right” arrows to pan West or East. After using the pan tools you can re-center on the “Georgia Dome” building by clicking

on the “Center” tool  and moving it on top of the “Georgia Dome” and clicking the mouse. You should end up with a map display like the one shown below.



34) To change each layer's drawing properties, click on the Map Layers  icon in the toolbar. This brings up the *Layer Options* window. From here, the user can change draw order, change transparency, or discard layers. In order to change the order in which the layers are drawn on a map, click and drag the handle  on the left side of the layer you wish to move. To remove a layer temporarily, click on the checkbox  on the right of the layer to select it or deselect it. To discard a layer completely, click on the "trash can"  icon to its right. Grab the handle  for "Cities with Backdrop" and make it the top layer above "Color Aerial Imagery Atlanta".

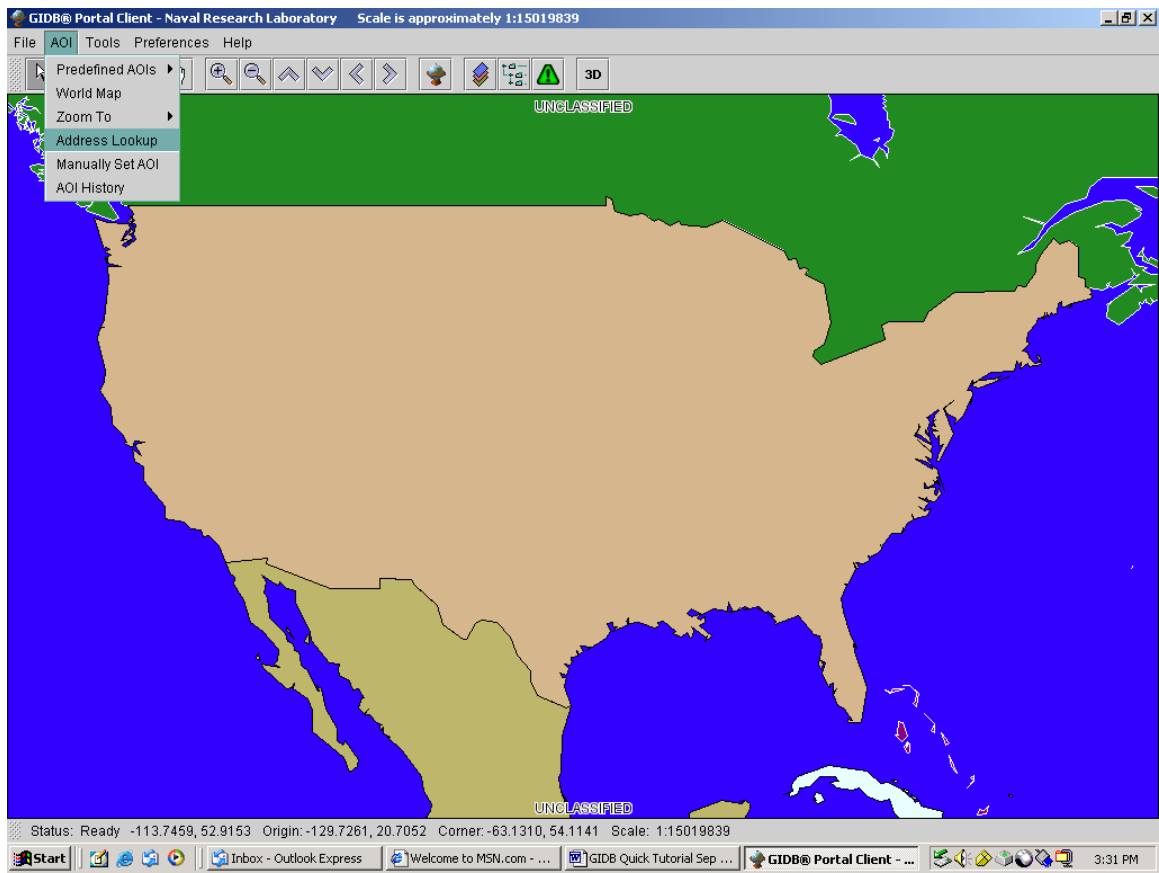
35) In order to change the transparency and other properties of a layer, click on the "Set various options" icon  to the right of the "Cities with Backdrop" layer. This will bring up the Layer Options box for that layer. Here you can change the overall transparency of the layer or the transparency of individual colors within the layer.

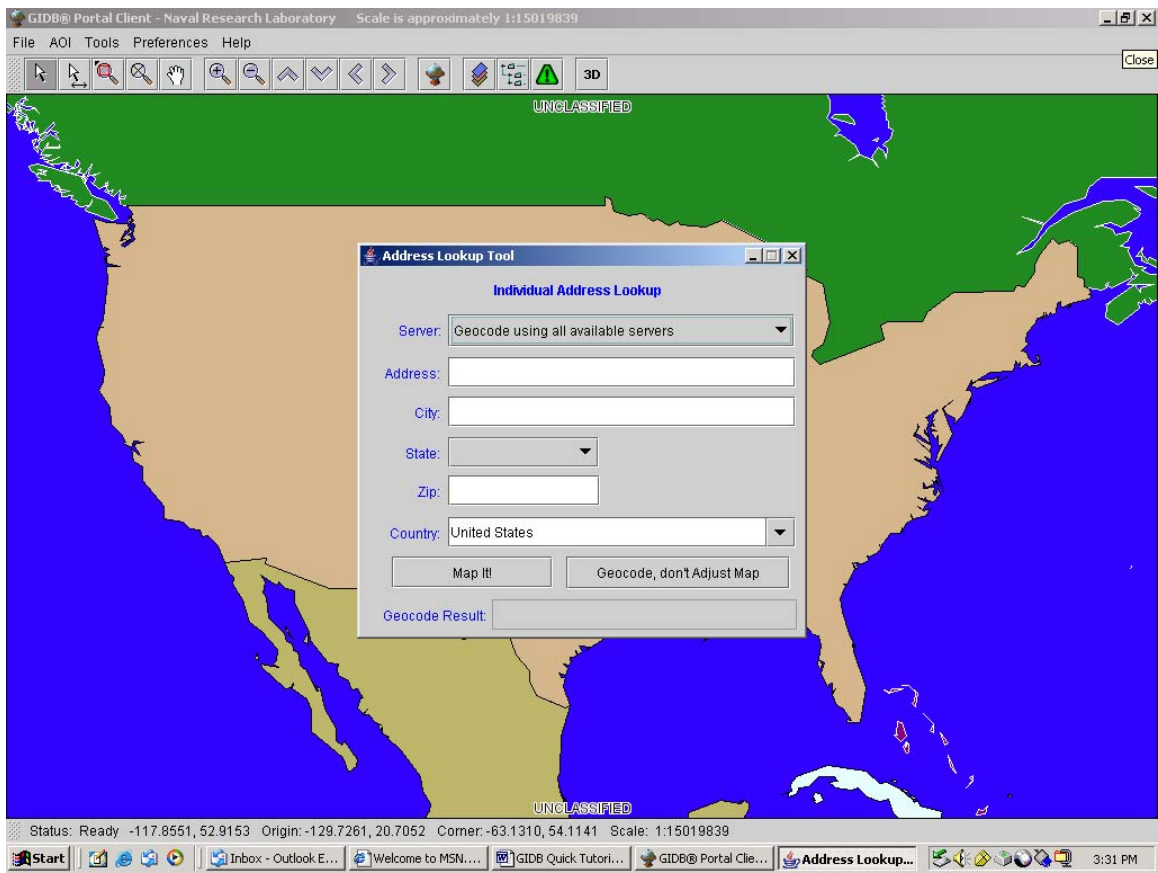


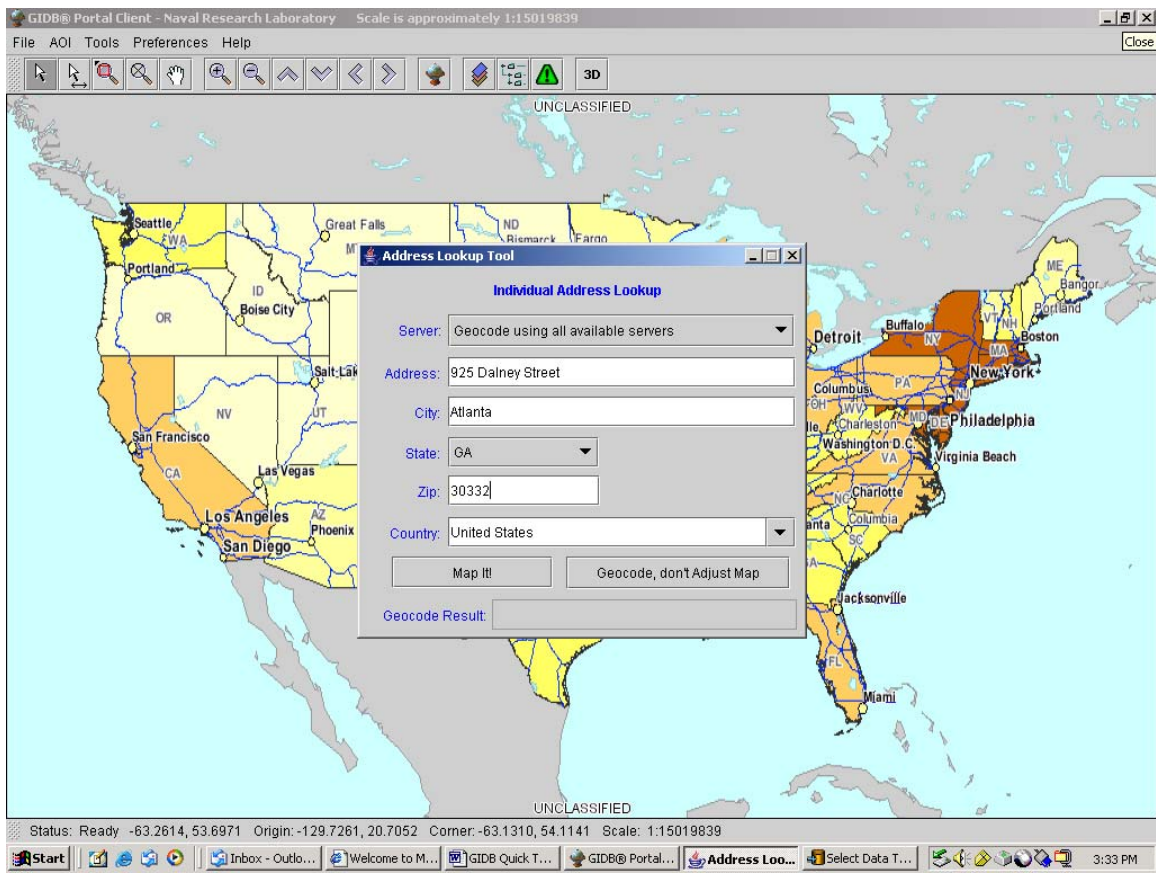
36) Next use the mouse to click on the “tab” under Overall Transparency Percentage as shown above and move it to the right 50% and click OK.

You now have the “Cities with Backdrop” layer with a 50% transparency overlay over the “Color Aerial Imagery Atlanta” layer. Please note that you have the streets geo-coded “on the fly” over the image without any technical manipulation.

The GIDB™ “Thick Client” software does this automatically or “on the fly”. Your image on the map display should appear as shown below.

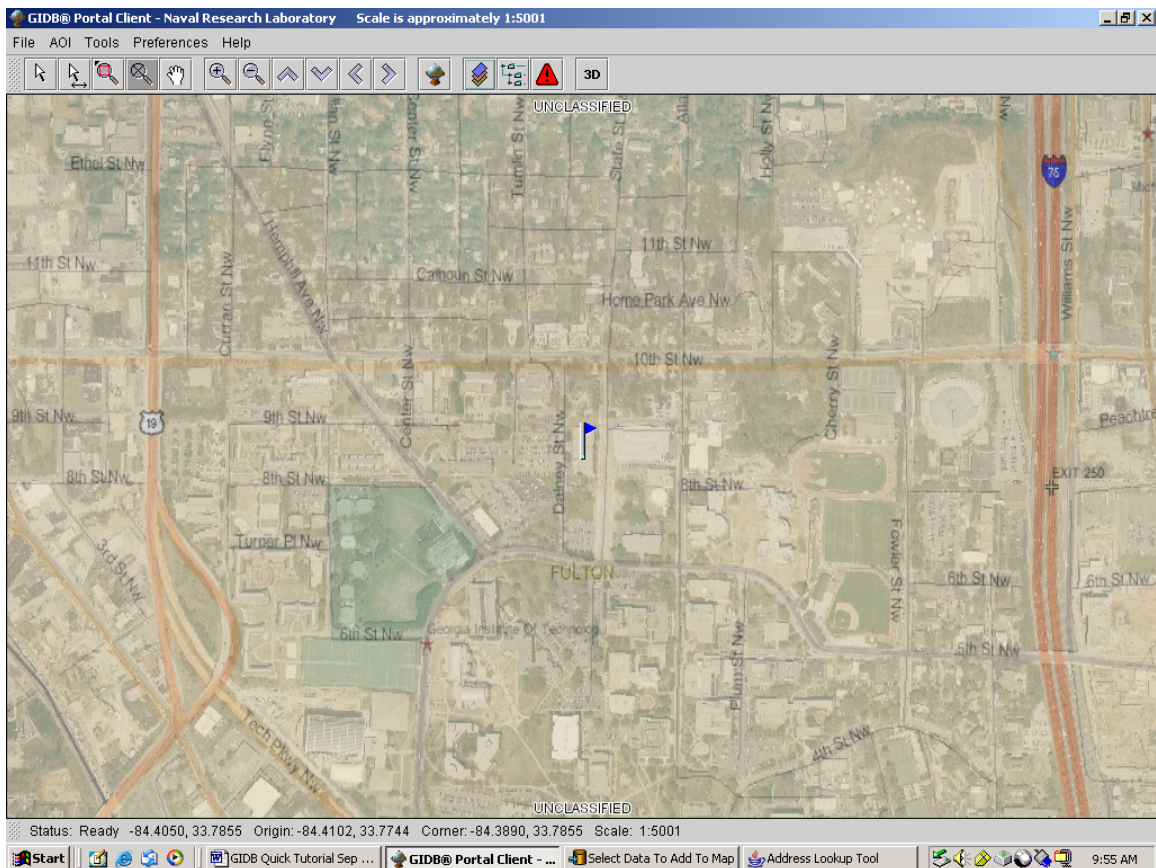







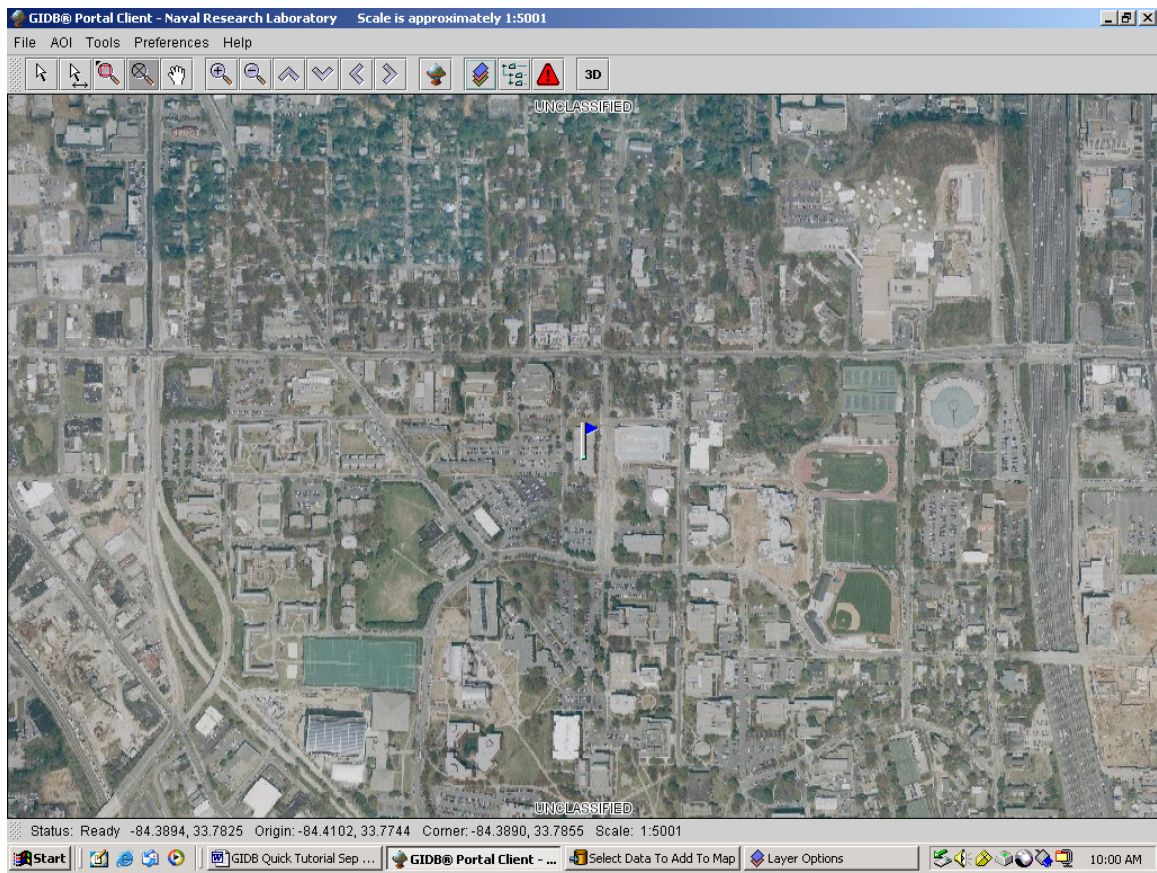
38) As an example you can keep your map display over the “Georgia Dome” with the “Cities with Backdrop” and “Color Aerial Imagery Atlanta” layers and follow these steps: At the top of the screen click on “AOI” then click on “Address Lookup”. In the “Address Lookup Window” type in “925 Dalney Street Atlanta GA 30332” as shown above. Next click on “Map It!”. Your map will zoom out automatically to locate the address and put a “blue flag” at the address location.

39) To adjust the scale click on “AOI” then scroll down to “Zoom To” then scroll over to “Scale” and click on “1:5,000”. Your map should like the one below.

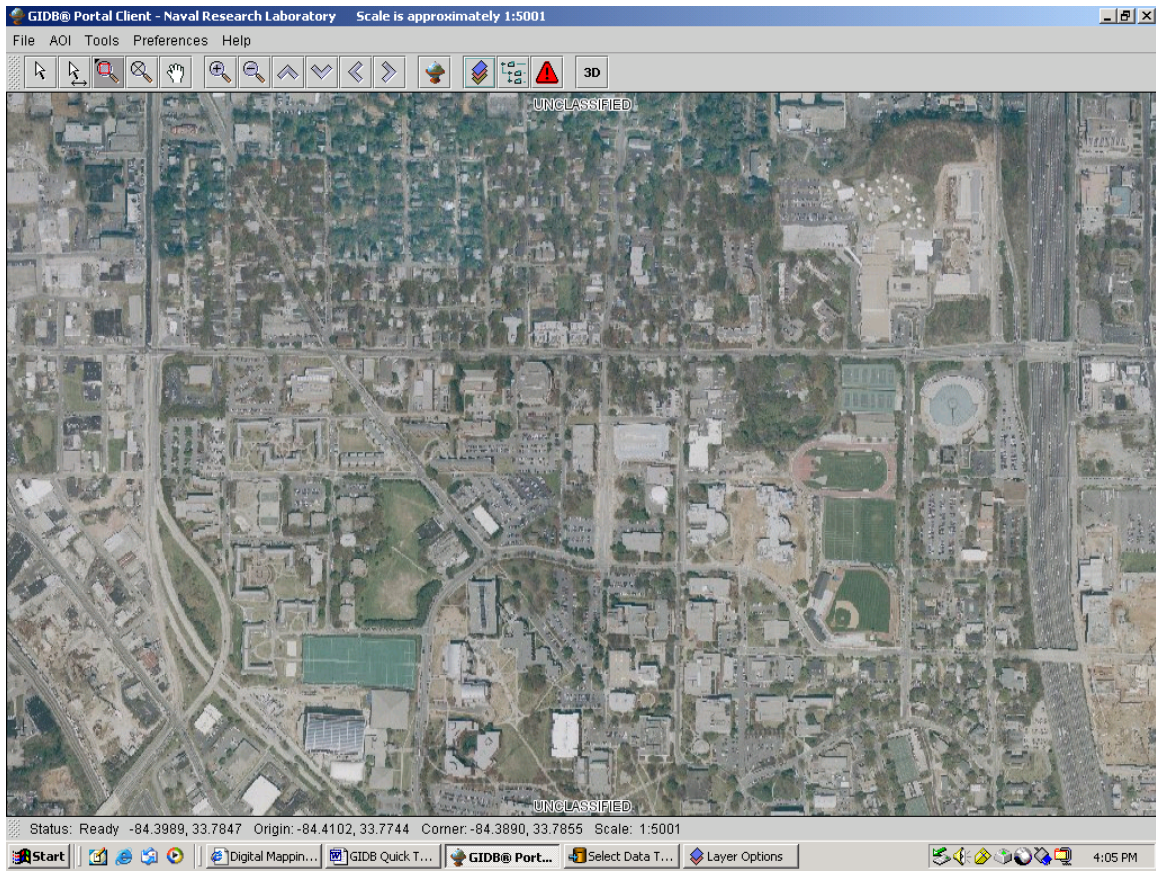


40) To see the imagery clearer you can “turn off” or temporarily remove the

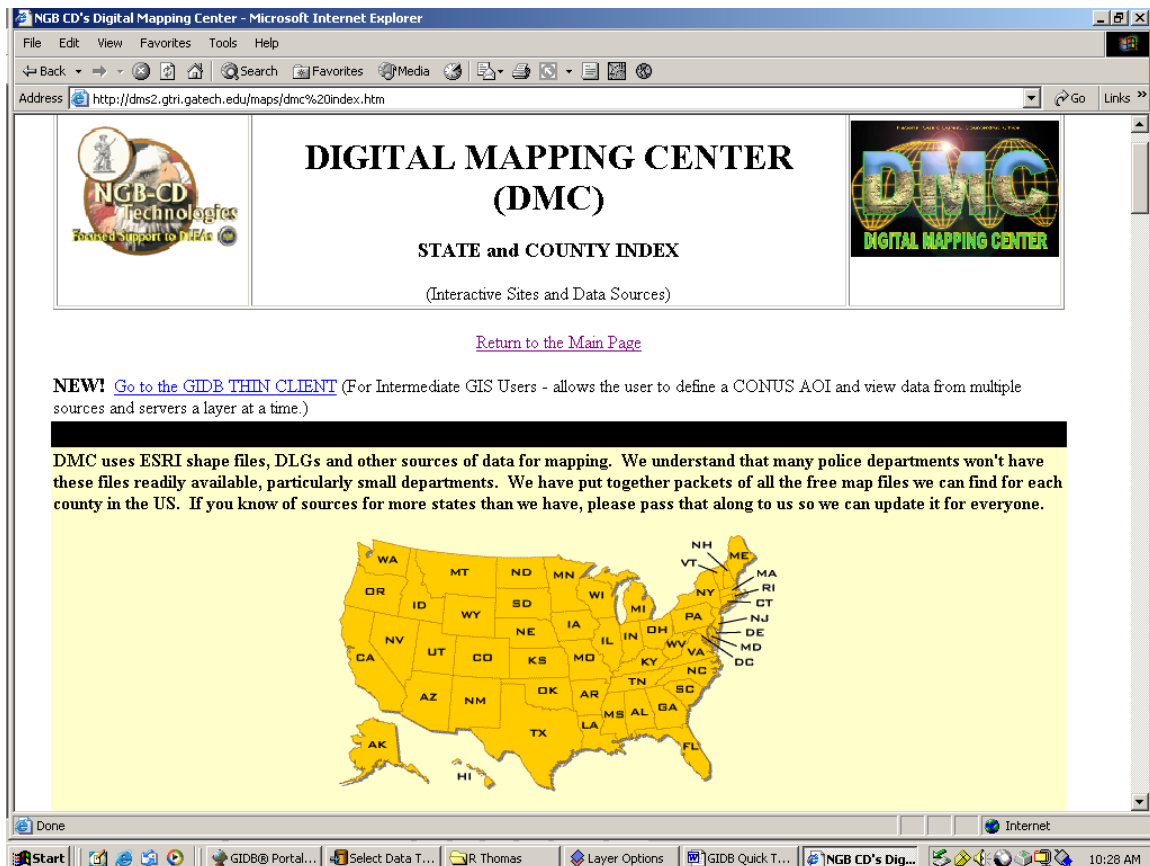
“Cities with Backdrop” layer by clicking on the Map Layers  icon in the toolbar. This brings up the *Layer Options* window. From here, click on the check box ☒ on the right of the “Cities with Backdrop” layer to deselect it. Your map should look like the one below.



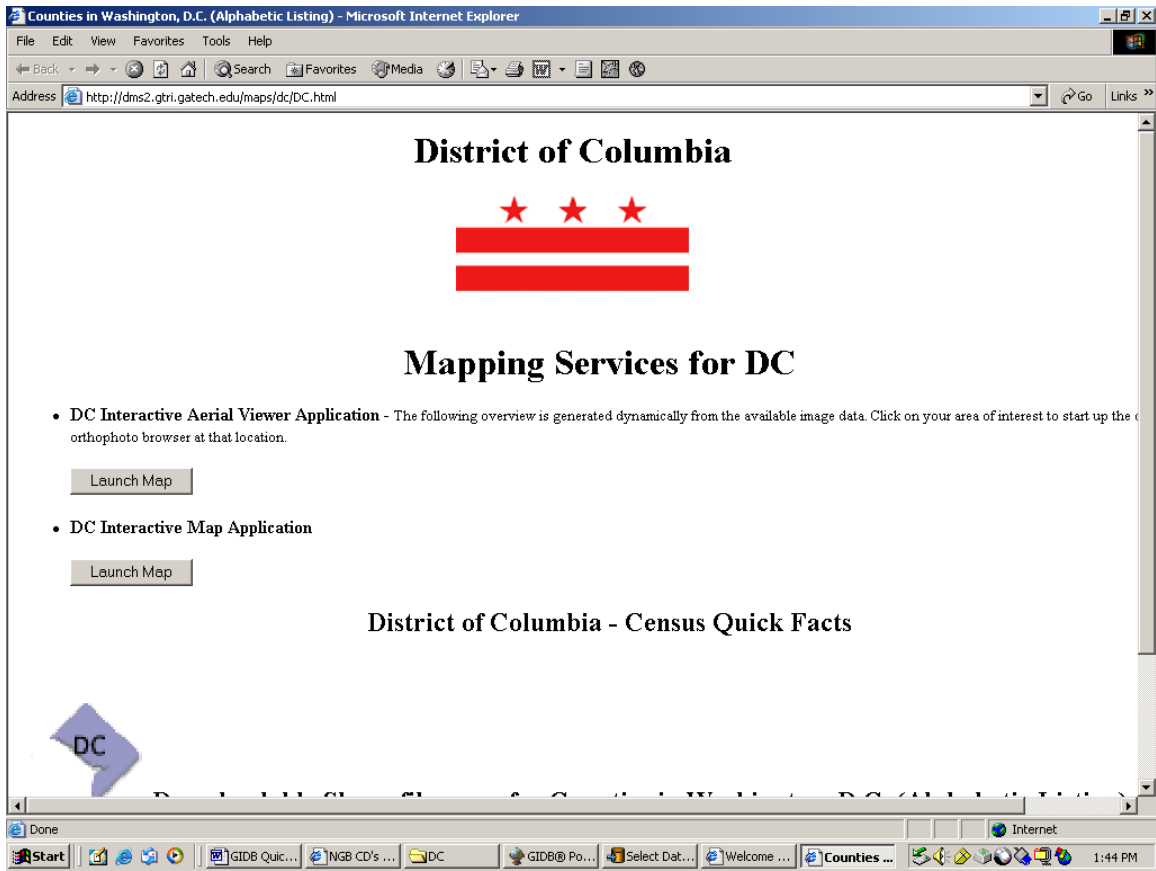
41) To see the building even clearer repeat the process used above for removing or "turning off" layers on the "1 Located Addresses" layer. Your map should look like the one below.

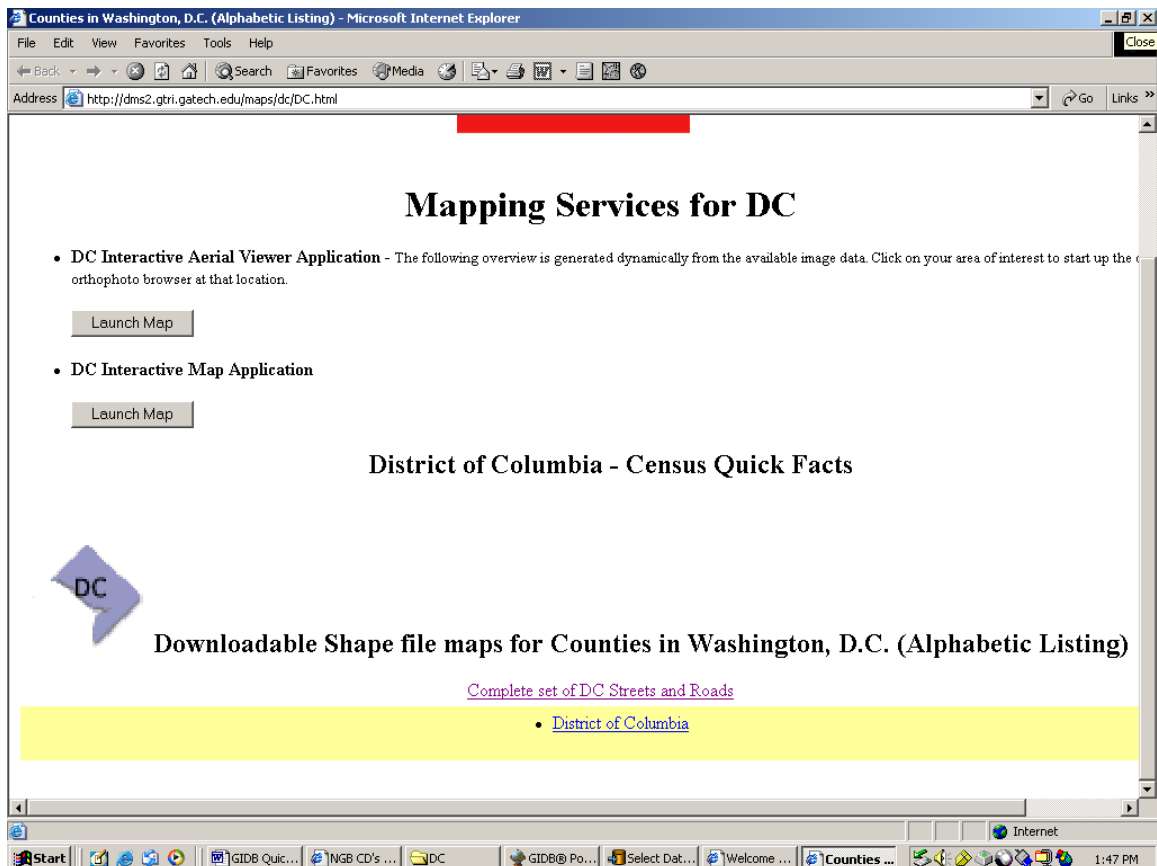


42) Before starting this step it will be best to close GIDB™. Now that we have successfully loaded and manipulated data using the GIDB™ “Thick Client” and Digital Mapping Server (DMS), we will now use the DMS web site to download some data for you to use locally. Open the Internet and type: <http://www.ngbcdmaps.org> When the page opens, click OK. Scroll down to the **Interactive Mapping Services and Data Downloads Area**. Click on “Go to the Digital Mapping Center (DMC) Services. The web page should look like the one below.



43) On the map shown on the web page, click on “DC” (Washington, DC). Scroll down to the bottom of the page and click on “Complete Set of DC Streets and Roads”. You will be clicking on a .zip file download for the DC Streets and Road data. It would be a good idea to stop at this point and create a C:\DC directory on your computer. You need a place to store the geographic data locally and organize it so you can easily find it when needed.

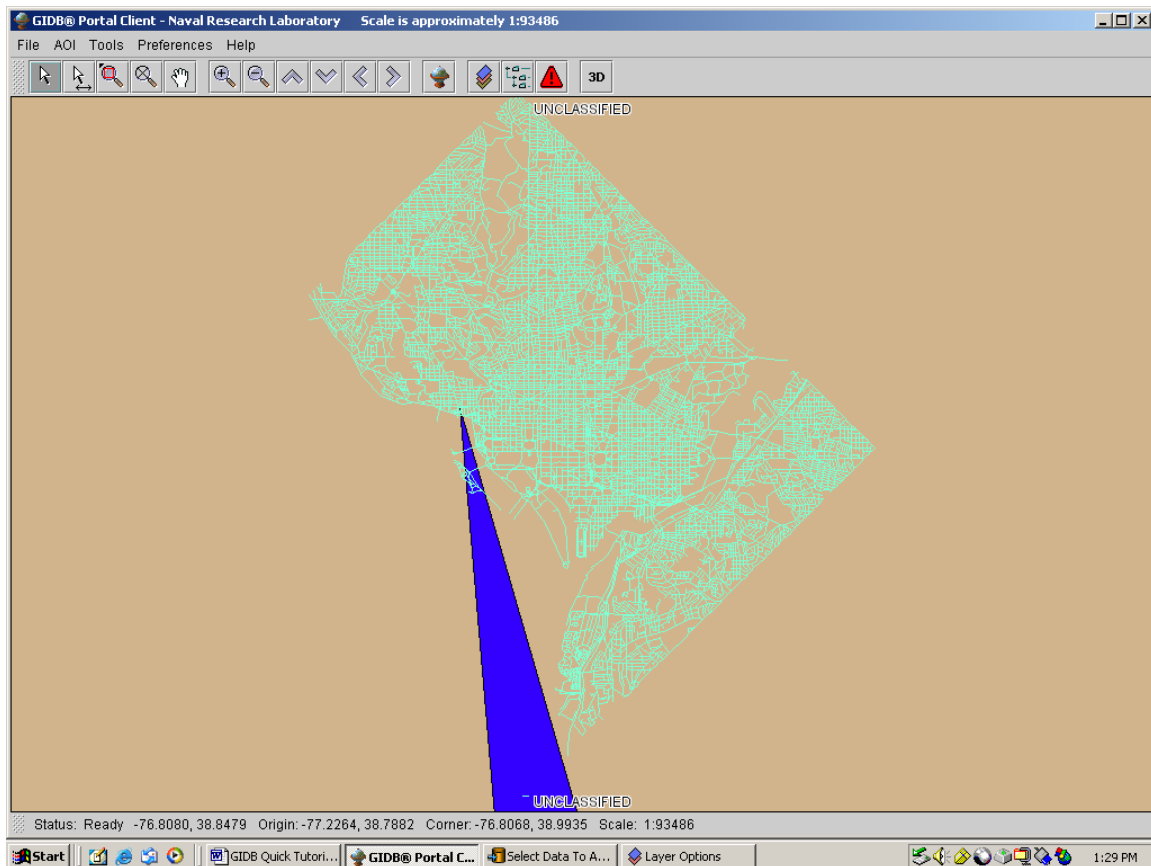




44) After downloading the files and unzipping them you can use the shape file (.shp) in GIDB™. Start the GIDB™ program. After the program opens click on

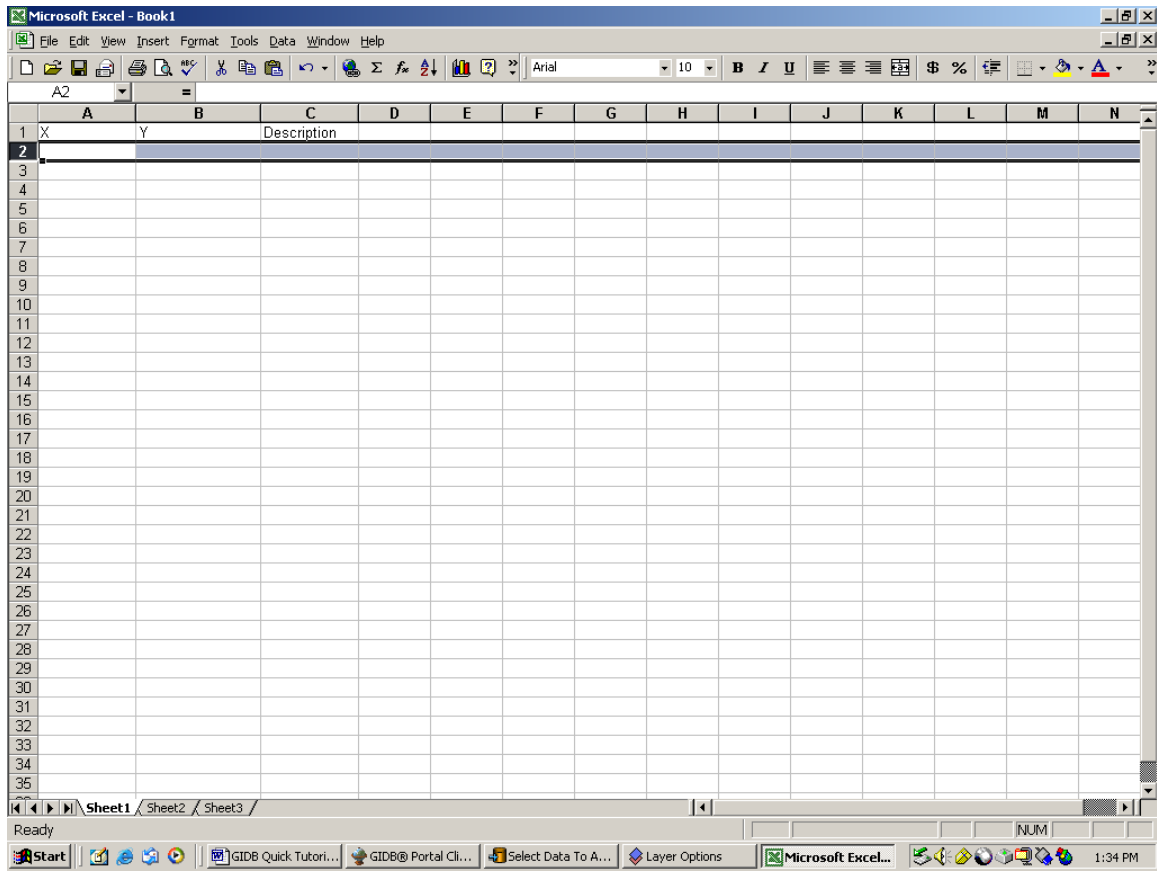


the data tree then click on “Local Data”. Click on the directory where you saved the DC street data (i.e. C:\DC) and double click on the file “gdt_98st_dc.shp”. Next click on “Entire File” This will load the DC street data on the map. To zoom in on the data click on “AOI” and move the mouse to “Predefined AOIs” and then “State”. Next click on “DC”. Your map should look like the one below.



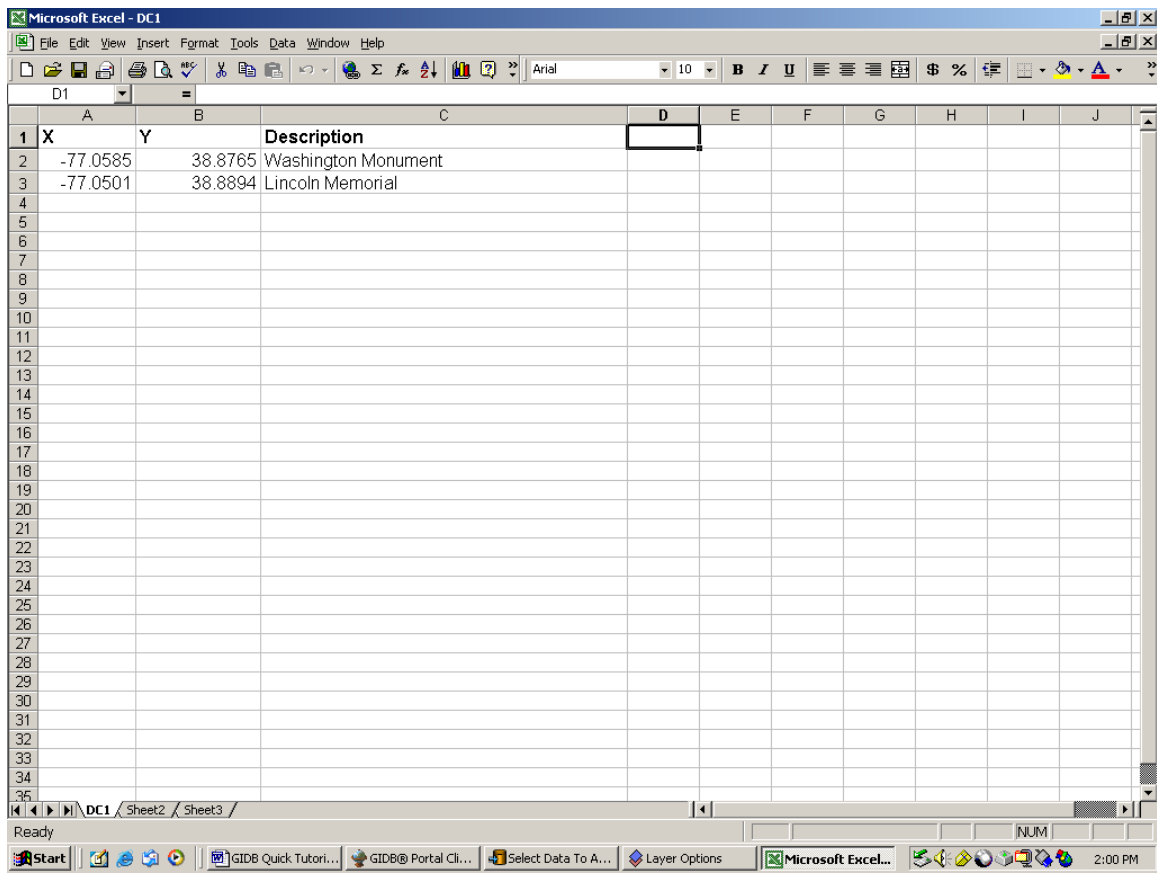
45) Next we will demonstrate how to load some local points on to the map using latitude and longitude (Lat/Long) coordinates. We will build a text (tab delimited) file using the Excel Program.

46) Open the Excel program. When it opens label A1 "X" , A2 "Y", and A3 "Description" as shown below.

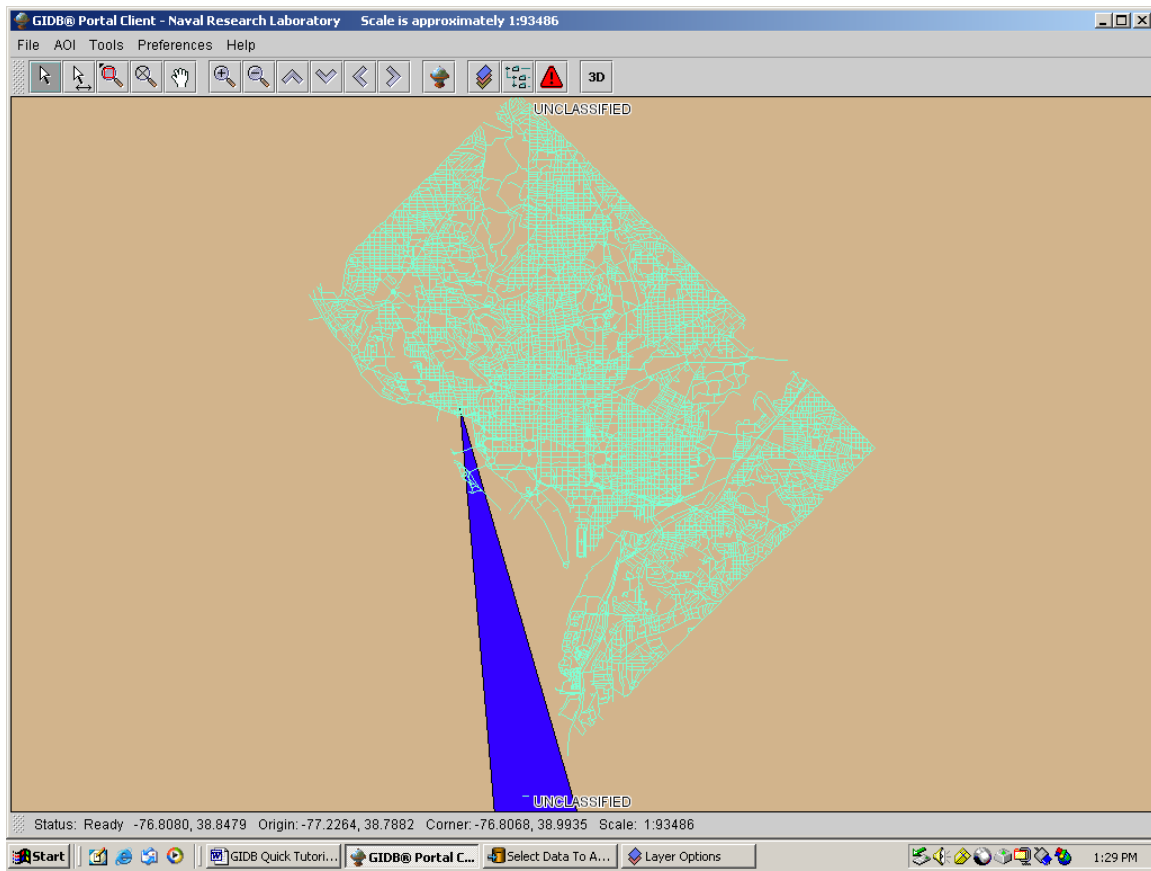


47) Put the longitude in decimal degrees “-77.0352” (Be sure and include the minus sign in front of the number for longitude only.) under the X column and put the latitude in decimal degrees “38.8895” in the Y column. These coordinates are similar to what you could get from a Global Positioning System (GPS). For the “Description” column enter “Washington Monument”. Repeat this process for the next row by putting for X:

–77.0501, Y: 38.8894, Description: Lincoln Memorial. Your spreadsheet should look as shown below. If it does click on File, Save As and select “Text (Tab delimited)” and save it to the C:\DC folder. You may want to name it “DC1.txt.”




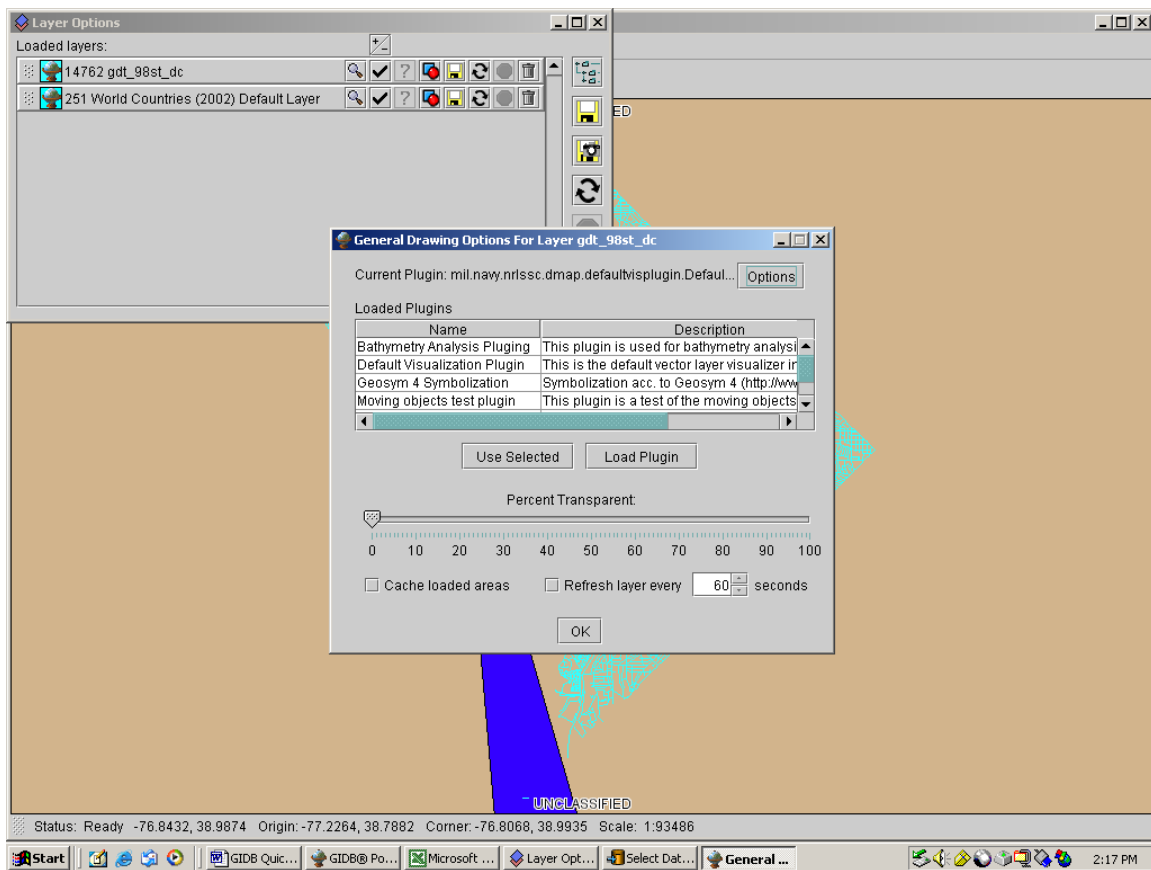
48) Close out the Excel program and return to GIDB™. You should still have the DC map open like the one shown below. If not, then repeat the process used previously to bring up the DC street data in GIDB™ for the DC area of interest (AOI)



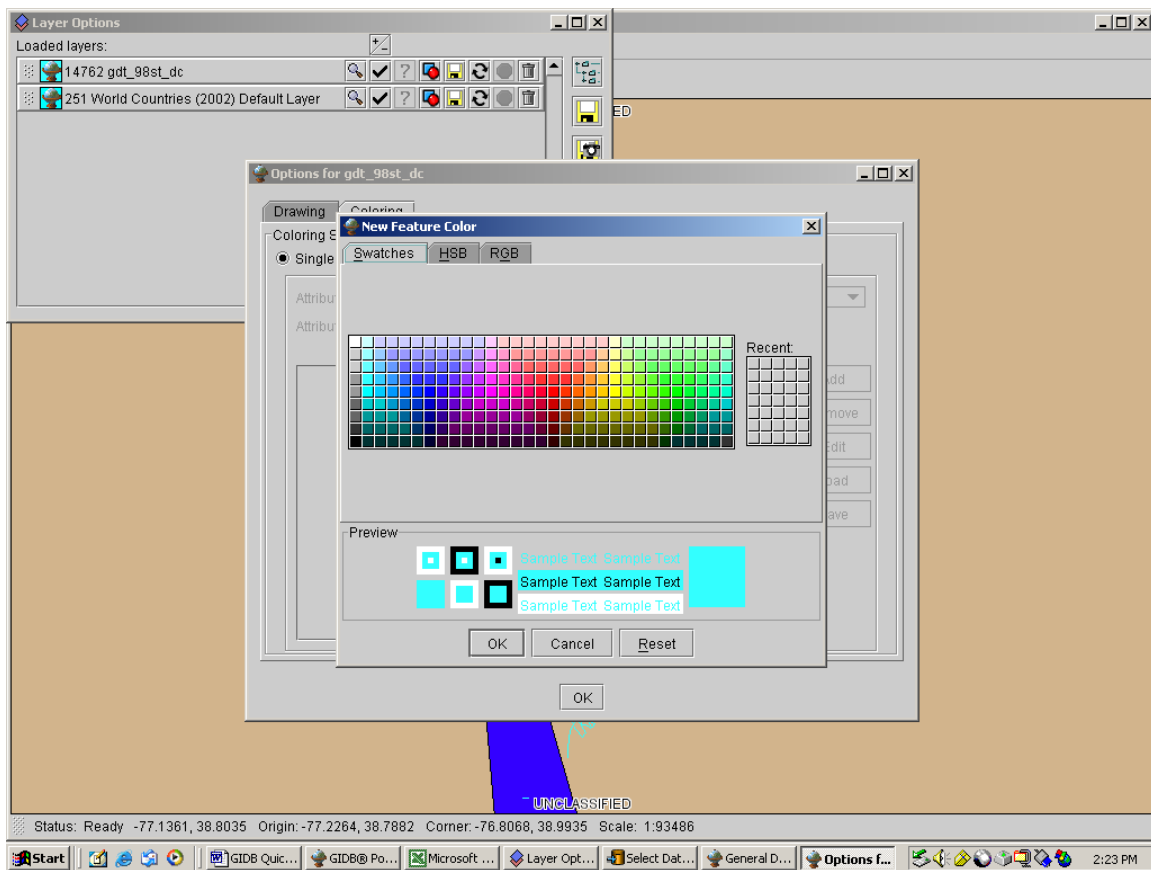
49) Streets, Highways, and Roads are normally displayed on maps with the color

“Red”. We will click on the Map Layers  icon and then the

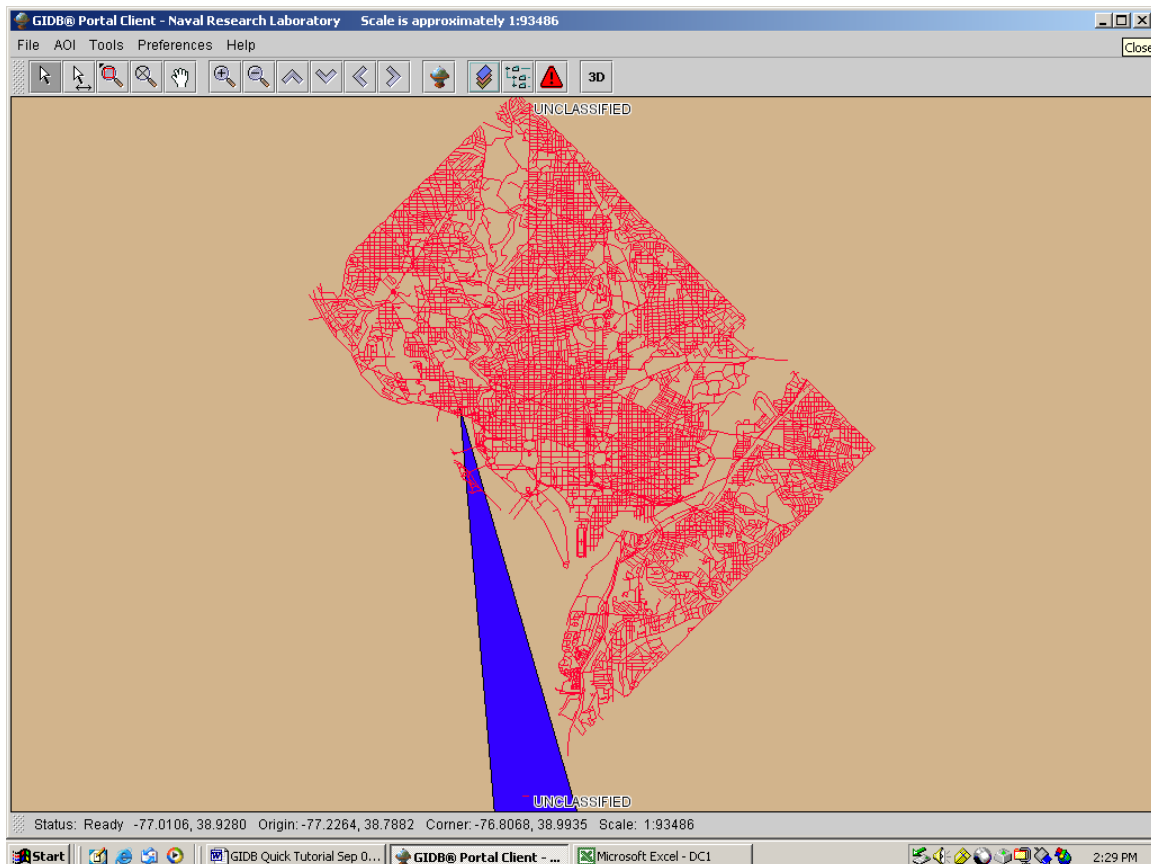
“Set various options” icon  to change the color from light blue to “Red” for the “gdt_98st_dc” data. Your GIDB™ display should look as shown below.




50) Next on the “General Drawing Options” box that is open click on “Options” and then click on “Coloring” tab. Next click on the “light blue” color box next to “single color”. This will open the “New Feature Color” box as shown below.

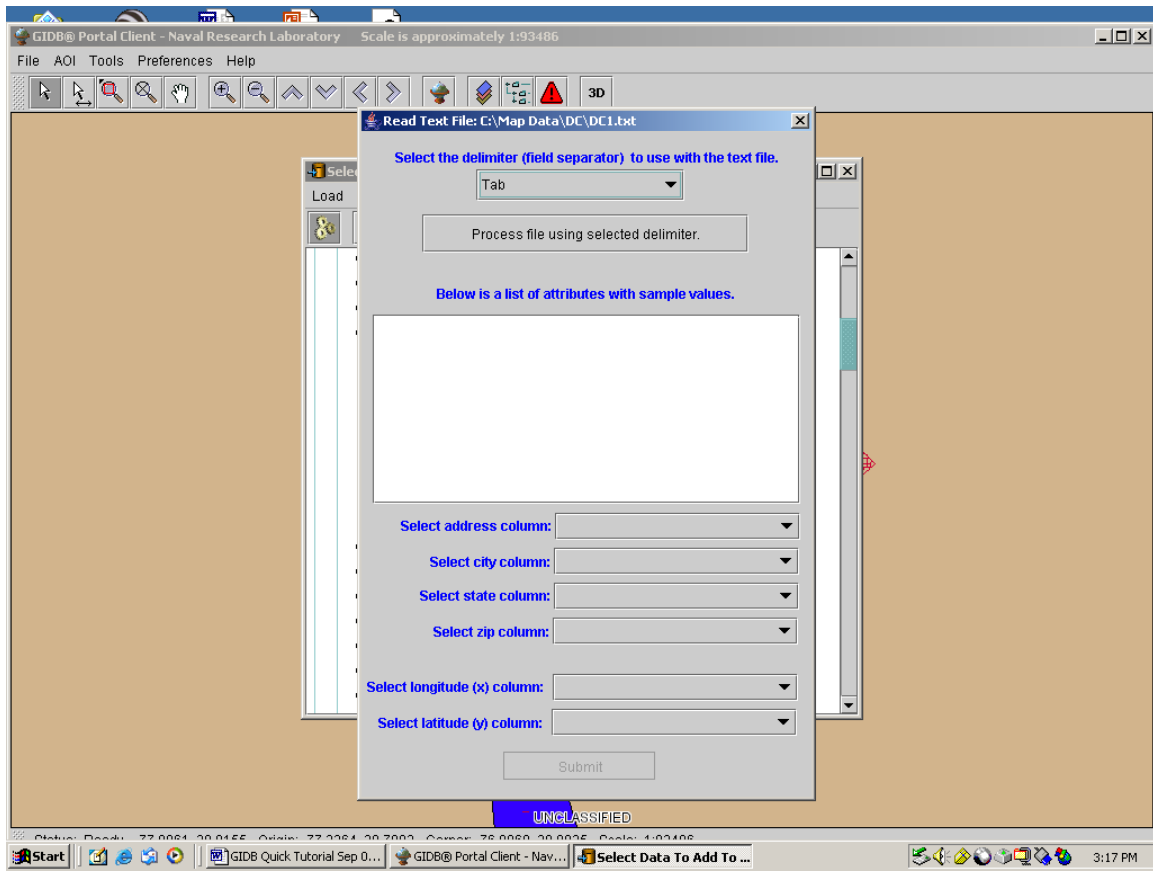


51) Next click on one of the shades of “red” within the New Feature Color box and then click “OK”. You should notice the color box next to the “single color” is now red. Click “OK” again. Close out the smaller boxes that are open. The streets are now “Red” as shown below.

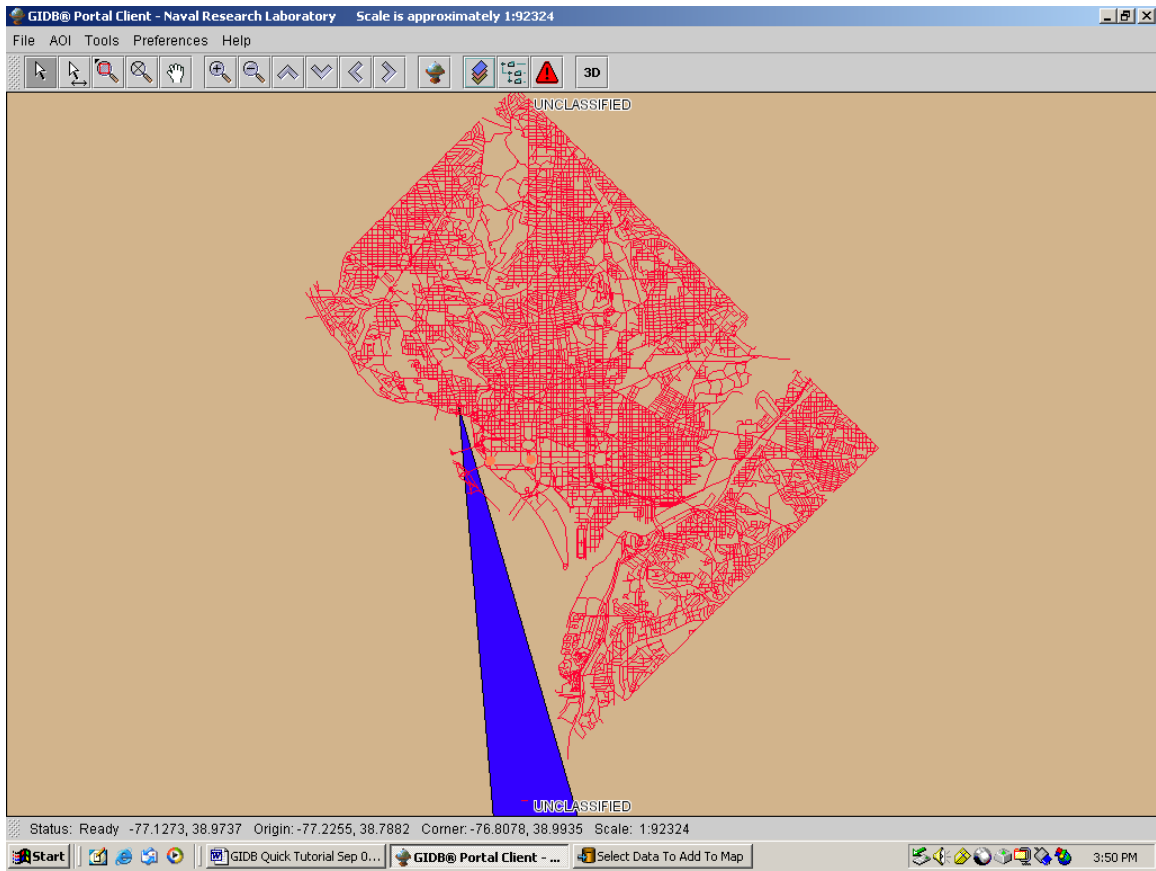



52) Now we will load the DC1.txt file for our points of interest (Washington

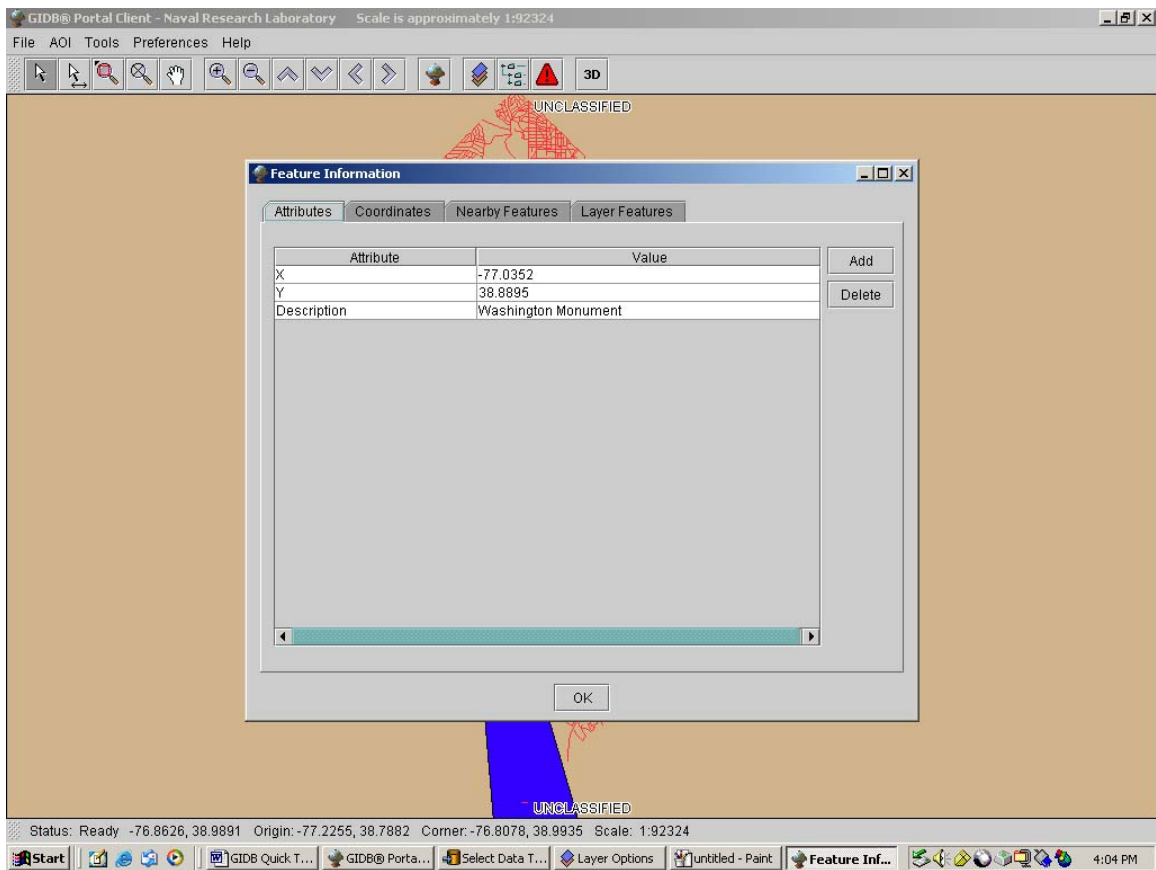
Monument and Lincoln Memorial). Click on the data tree  then click on "Local Data". Click on the directory where you saved the DC1.txt file (i.e. C:\DC) and double click on the file "DC1.txt". Next click on "Entire File". A "Read Text File" window will open as shown below. Click on "Process file using selected delimiter", scroll down to "Select longitude (x) column" and click on the "down arrow" and then click on "X" and then scroll down to "Select latitude (y) column" and click on the "down arrow" and then click on "Y". Next click on submit.



53) Your map should look similar to the one shown below. If desired you can change the color for DC1.txt using the same process as you used to change the color of the roads, only make sure you select the layer of DC1.txt



54) Use the arrow tool  (the icon under “File” at the upper left of the GIDB™ Map display) to click on the “dot” to the right. The X,Y, and Description information is the attribute data associated with this location. It is the data you created in the .txt file previously. If you click on the streets or country layer it will give you the attributes for those layers as well. Continue to click until your “Feature Information” box looks as shown below.




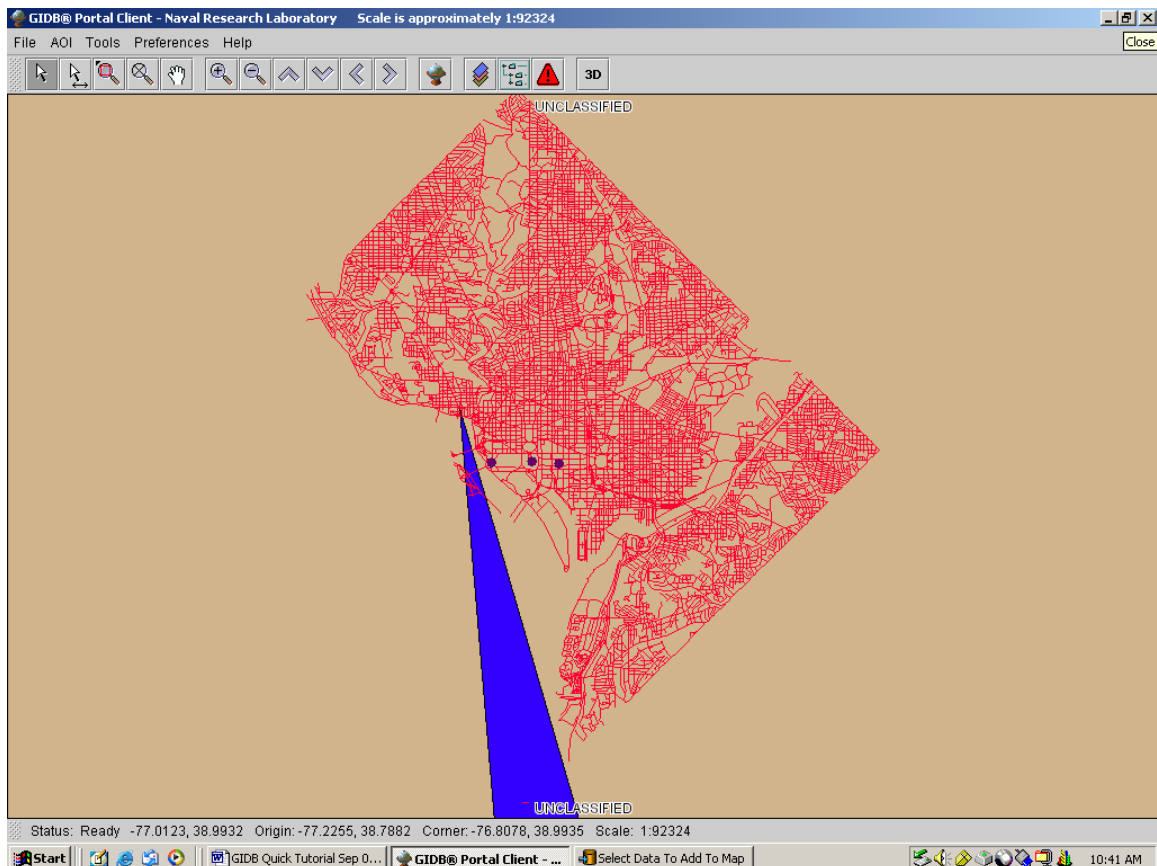
55) Adding local data can be useful. You can download data from a variety of government or commercial sources. You can also create your own data as demonstrated with the “GPS” coordinates. You can also build an Excel spreadsheet for “addresses”. For example, the Smithsonian Visitors Center “Castle” on the Washington Mall is located at “1000 Jefferson Drive SW Washington, DC 20006.” You can build an Excel spreadsheet and build columns for “Address”, “City”, “State”, “Zip”, and “Description”. For “Address” enter “1000 Jefferson Drive SW”; For “City” enter “Washington”; For “State” enter “DC”; For “Zip” enter “20006” and for “Description” enter “Smithsonian Castle”. You have the potential to enter any addresses from your local areas and getting them geo-coded on the map as long as you enter them in this format with the correct address and zip code information. The geo-coding is handled on the fly and it should come back and display on the map unless there is either a problem with the address or geo-coding process. Your spreadsheet should look like the one below. If it does click on File, Save As and select “Text (Tab delimited)” and save it to the C:\DC folder. You may want to name it “AddressDC.txt.”




	A	B	C	D	E	F	G	H
1	Address	City	State	Zip	Description			
2	1000 Jefferson Drive SW	Washington	DC	20006	Smithsonian Castle			
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
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56) Now we will load the AddressDC.txt file for our point of interest (Smithsonian

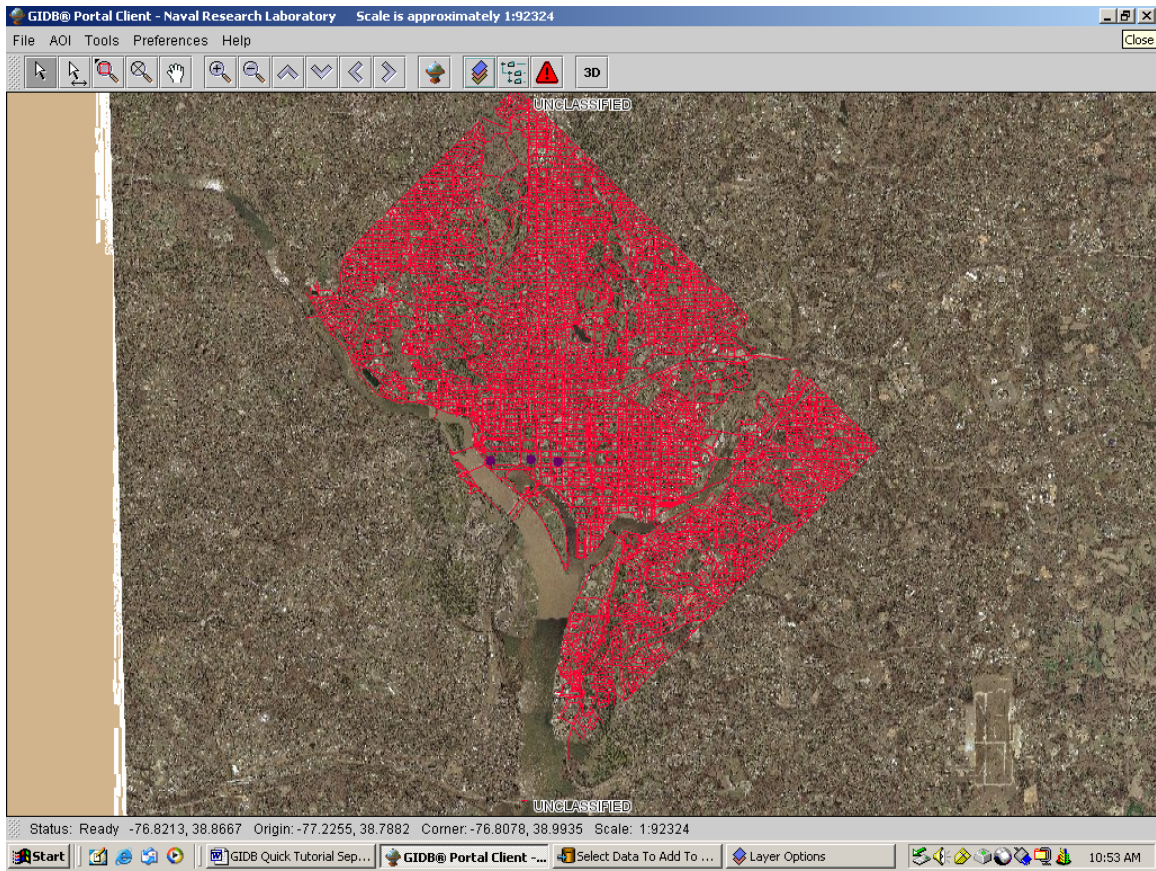



Castle). Click on the data tree  then click on “Local Data”. Click on the directory where you saved the AddressDC.txt file (i.e. C:\DC) and double click on the file “AddressDC.txt”. Next click on “Entire File”. A “Read Text File” window will open as shown below. Click on “Process file using selected delimiter”, scroll down to “Select address column” and click on the “down arrow” and then click on “Address”, next scroll down to “Select city column” and click on the “down arrow” and then click on “City”. Next scroll down to “Select state column” and click on the “down arrow” and then click on “State”, next scroll down to “Select zip column” and click on the “down arrow” and then click on “Zip”. Next click on submit. The address location will now load. When you have your local data loaded for DC streets, DC1.txt (Washington Monument and Lincoln Memorial), and AddressDC.txt (Smithsonian Castle) your map should look like the one below. If you have problems and your dots are not “Three in Row – nearly a straight line”, then Use the Address Look function under AOI used earlier in this guide. Type in the address: “1000 Jefferson Drive SW Washington, DC 20006”. Delete the AddressDC.txt file from the “Layer Options” menu and try loading the AddressDC.txt file again.



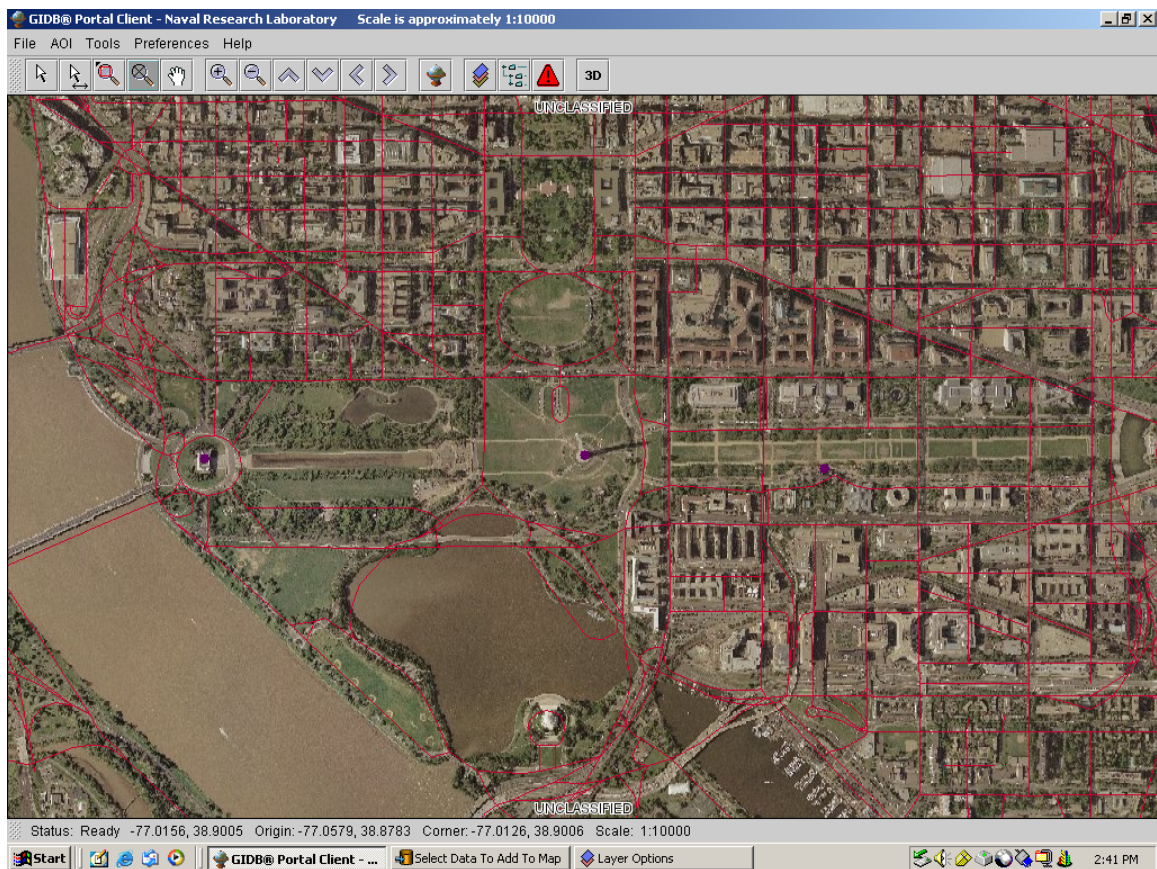
57) We now have added local data and local points to our map display using the area of DC as an example. Let check out our work by going to the data tree . Next click on the search engine icon . Type in “DC Imagery”. Click on the first “Washington DC 1” coverage. Click on the Map Layers  icon and use the button on the “Washington DC 1” layer to move it to the bottom just above the “World Countries” layer.

Your map should look like the one below.



58) Now we will zoom in on our area of interest. Click on the “Center” tool  and use it to center on the middle of the “three dots in the row”. Next use the “AOI” then “Zoom to” then “Scale” and click on “1:10,000”. You should notice the imagery shows the Washington Monument at the center of the map display. Feel free to review what you have learned through this guide. Turn layers on and off. You may want to take a “tour” of DC. You are only limited by the data that is available and your imagination. The GIDB™ “Thick Client” can greatly assist you with your mapping requirements.

59) The intent of this guide was to walk through some of the main functions of the GIDB™. The possibilities of the GIDB™ tools to help in your digital mapping efforts continue to improve with practice and use. These “no cost” mapping tools provide a tremendous amount of mapping and imagery data right to your desk with just a few clicks of the mouse.



60) In addition to this guide, you may also use the on-line help documentation by clicking on help at the top of the GIDB™ menu. For additional help, please email Kevin Shaw, shaw@nrlssc.navy.mil or 228.688.4197.